THE

EDINBURGH

NATURAL HISTORY SOCIETY

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EDINBURGH NATURAL HISTORY SOCIETY

1974

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EDITORIAL

The Editorial Committee would like to thank members who have contributed observations, notes, reports and longer articles for this Journal. It is hoped that more members will do so in 1975. Contributions, a few sentences or longer, may be given in at any time throughout the year, but if possible, not later than the first fortnight in November.

Through the accounts of the activities of the Society and by reports of observations by members, it is hoped to make the Journal a lively record of the Natural History of Edinburgh and the surrounding countryside. Articles on the Natural History of specific areas, especially on the changes which have taken place in them over the last decades, will be specially welcome.

From the reports in this Journal, including the report of the Tree Planting Ceremony on Wester Craiglockhart Hill, ending in the delightful poem, written specially for the occasion by our Honorary President, Mr. P.W.G. Gunn, it will be seen that during 1974, there has been much co-operation with other Societies and with Public Bodies. We are grateful to representative members of these societies and bodies, who have given of their time and knowledge to lead excursions and to lecture.

On several occasions the Society has been asked for, and been able to supply information, including details of the Natural History of Corstorphine Hill, Hermitage of Braid and Blackford, and Cramond, to the Parks Department of Edinburgh Corporation; and the Society has been asked by Edinburgh Corporation to take part in presenting the Countryside in Edinburgh Exhibition in Meadowbank Stadium in April 1975.

During the year the Carnegie United Kingdom Trust, which takes an interest in Field Work Projects carried out by Natural History Societies affiliated to the Council for Nature, awarded two grants to our Society, one for the Corstorphine Hill Project and the other for the Union Canal Project. The money will be used to buy equipment - mammal traps and maps for field work on Corstorphine Hill, pond nets for that on the Union Canal. This Editorial gives us a pleasant opportunity of recording our thanks publicly to the Trust and to the Council For Nature.

We should like to thank our President for her enthusiastic leadership and for her initiative in forwarding the activities of the Society; the Honorary Secretary and her helpers for their untiring secretarial work; the Honorary Treasurer for his wise guardianship of our finances; the Excursion Committee, who spare no time, trouble and energy, organising and carrying through excursions; the Catering Group who supply us with nourishment at meetings and finally Gordon Finnie and his associates for printing the Journal.

Only one intimation of death of a member of the Society has been received during the year. We record that of Mr. R.B. Willis.

AMENITY TREE PLANTING ON CRAIGLOCKHART HILL

Co-operating in the drive of 'Plant a Tree in '73', it was proposed at a Council Meeting in April 1973, that the Society should consider a contribution on this theme. At the Council meeting in August it was suggested that the tree planting might be a useful contribution to the woodlands on Corstorphine Hill. Mr. R.H. Watson, the Edinburgh Corporation Forestry Officer, was approached on the question of adding to the amenity tree planting in Edinburgh and he recommended that the most suitable and interesting site would be on the crag slope of Wester Craiglockhart Hill to the east of the old Castle ruins.

The numbers and tree species were then resolved and it was agreed that funds should be made available for planting about a hundred young trees including Ash, Beech, Gean (Wild Cherry), Norway Maple, Sycamore, European and Japanese Larch and Scots Pine. It was further suggested that the planting should be done during the winter months, and in March 1974, Mr. Watson and his assistants carried out the planting of the majority of the trees selected, leaving twelve to be planted at a suitable Society ceremony.

On the pleasant evening of 20th March 1974, the final tree planting was carried out at a happy informal ceremony attended by Mrs. Elizabeth Farquharson, Mr. McLeod, our past President, Miss Nora Henderson, our Secretary, representatives of the Council, Mr. Gunn and a number of Society members. Ash, Gean, Norway Maple and Sycamore were duly planted, Mr. Watson, Mr. Gunn and Colin Bell, representing the Junior Members of the Society, each planting a tree. After the planting had been completed Mr. Gunn recited a poem he had written in honour of the occasion and which was received with acclamation. The poem is duly reproduced.

It is worthy of note that it is hoped to extend the planting up the slope towards the crags using Birch, Rowan and possibly other suitable species which will further add to the amenity of the area. The Edinburgh Natural History Society has thus added an interesting contribution to the City woodlands.

W.A. Fairbairn

Address to a Tree

On its being planted on behalf of the
Edinburgh Natural History Society on March 20th 1974

Little tree - I've planted thee
This Spring of 'Seventy-four' -
And one day there will be a grove
(When we have planted more!)

Some future day thy boughs will stir
With many a bright bird's wing
Some day from out thy spreading boughs
We'll hear the chaffinch sing.

Some day when you are fully grown -
Cooing to show his love
To ev'ry one that passes by
Will come the bright ring-dove.

Some day beneath thy leafy boughs
True lovers here may meet
And like the cushies tell their love -
And vow that life is sweet.

As sweet it is to all the folk
Of our Societee
Who love the birds, the trees, the flowers -
God bless thee, little tree.

P.W.G.G.

CLIMATIC CHANGE

The world is beset by problems of which it seems only to have become aware within the last few years, population growth, the energy crisis, food production, shortage of raw materials, for example. All these interact with each other and cannot be fully considered in isolation. One of these problems is climatic change, affecting as it obviously does at least three of the issues enumerated above.

Most of us are aware that there have been Ice Ages in the geological past. They have written their signatures on the shape of our mountains and glens, on the detritus deposited in river beds and on erratic rocks often left hundreds of miles from their parent station, but what do we know of the less extreme swings of climate and can we predict anything of what the future has in store.

Instrumental observations of weather with a good geographical coverage over Britain take us back to about 1800-1850. Tables of monthly mean temperatures for central England have been constructed back to 1659 based on large numbers of short instrumental records from places as scattered as London, Lancashire and the West Country. Prior to this, knowledge depends on the interpretation of descriptive accounts of the weather in diaries and records of crops, mainly from abbeys or monasteries back to about 1100. To illustrate the information which can be extracted from such sources - if we have four descriptions of a specific day's weather from different parts of the country, it is possible in the light of modern meteorological techniques to draw a reasonably good weather map for that day and assign maximum and minimum temperatures to different places and even estimate rainfall amounts.

Earlier than A.D. 1100, only very general ideas on climate can be derived from knowledge of the advance and retreat of glaciers, pollen counts and tree rings, even the stratification of lakes. Glaciers have such a great inertia at best they only respond to the weather of centuries rather than individual years or even decades. A vast amount of work has been done relating annual tree ring growth to weather. The problem here is that their thickness, even when other irrelevant factors such as the age in life of the individual tree have been eliminated, is a reliable indicator of the climate when the tree is subject to only one type of climatic stress, limiting its annual growth. This occurs, for instance, at the northern forest limit or upper timber line where temperature is the control or at the lower forest level in arid areas where rainfall is the limiting factor. The trees most suitable for such analysis are Yellow Pine, Giant Sequoia (with a life span of 3000 years) and Scots Pine.

Any piece of historical evidence which contains carbon (as most natural objects do) can now be dated within quite close limits, two or three centuries at most, by means of radiocarbon dating on the fact that a roughly constant proportion of the carbon molecules in the atmosphere are radioactive and decay to nitrogen at a known rate. Analyses of the relative proportions of the two types of carbon in the sample provide the date when it ceased to absorb carbon from its surroundings. Such dating takes us as far back as 50,000 years ago becoming less accurate with age.

These are the principal ways in which we have derived our knowledge of past climates. There are known to have been eight Ice Ages in the last 700,000 years but this article will now restrict itself to the climate since the last Ice Age, which was ending about 8,000 B.C. In Britain the average summer mean temperature was about 12.5° Centigrade and the average winter temperature -5.0°. No month as cold as this is possible today but July and August of 1965 had mean temperatures of 12.5° and 13.5° respectively in Edinburgh. Permanent ice came as far south as the Bristol Channel and almost to the Thames; some recent evidence suggests that glaciers even advanced into Somerset and Dorset. England was joined to the Continent, in fact it remained so for another 2,000 years, and Ireland was connected by land to Scotland.

The ice retreated northwards and temperatures over the British Isles rose to a climatic optimum, the Atlantic era, such as have been experienced since. The warm conditions lasted broadly from 5,500 to 3,000 B.C., with mean summer temperatures of 17.5° (the average summer was then similar to our very hot summer of 1955) and winter mean temperatures of 5°, about the temperature of a modern March. In the early part of this warming period, the Boreal era around 6,500 B.C., the country enjoyed short hot summers with the rest of the year colder than now, but by 4,000 B.C., there were only short winters and a lengthening of the warm season through spring and autumn though the rainfall was probably 10 to 15% higher than today. This was the time of Neolithic Man, beginning to farm at first in southern England but soon moving north. Rain bearing winds were penetrating the Sahara and the deserts of the Indian sub-continent. However in spite of the high temperatures the Alpine ice cap never entirely disappeared.

After 3,000 B.C. temperatures were to fall though with many twists and turns in the story. Winters were coolest around 2,000 B.C. and summers reached their present level about 500 B.C., when the range between winter and summer was probably at its least as the winters were markedly milder than today. The standing stones of Callenish in Lewis and Stenness in Orkney date from about 2,500 B.C.

The next climatic fluctuation of which we have definite knowledge was the warm epoch between A.D. 1150 and 1300. On average, temperatures were rather more than half a degree centigrade higher than today. This does not sound much but it was sufficient to support the regular culture of vines in southern England and enough wine-making was carried on to satisfy the home market. Vines were even a commercial proposition as far north as Yorkshire. Rainfall was higher than today over the year as a whole but high summer was probably drier. This warm spell was also observed in Iceland.

Temperatures declined quite sharply after 1300, indeed between 1500 and 1700, the British Isles encountered a little Ice Age. Between 1693 and 1700, probably the coolest and wettest summers of all, seven out of eight harvests failed throughout Scotland. There was widespread famine and starvation. This calamity is said to have had its effect on the Act of Union with England. The disaster was not repeated south of the Border largely because of the higher temperature normals and harvests were usually sufficient to prevent starvation. The Alpine glaciers had a maximum advance around 1600.

This cool period, in fact the whole time from 1400 to 1800, was probably about 7 or 8% drier than today. While no regular oscillations of temperature can be detected it is a fact that since 1300 the second half of each century has had wetter summers than the first half.

Since 1700 summer temperatures have not changed much although there have been runs of warm years around 1740, 1780 and 1940, while winters became steadily milder from 1750 to 1930 but there now seems to have been a downturn and this trend can be seen in all seasons over the last 25 years. No one can say as yet whether it represents merely a temporary recession or a real turn towards colder conditions, even towards an Ice Age, but at worst the movement so far only represents about one sixth of the way to an Ice Age such as was seen ten thousand years ago; the late 1820's and 1890's, for instance, were cooler.

Glacial advance has hardly restarted in so short a time. The date of the last maximum advance was around 1850 in both the Alps and Iceland, although in Norway it was a century earlier. Unfortunately for historians of climate glacial advance obliterates the evidence of earlier ice movements.

Scotland is rather deficient in evidence of climatic change. A pine tree trunk and some roots found below the surface of a peat bog at Achiltibuie about 1945 have been dated (by radiocarbon dating) around 2400 B.C., at the latter part of the post-glacial warm period. In the historic past the great forests of Scotland have been burnt to eliminate Wolves and Bears, to make life difficult for outlaws and even clan rivalry, not to mention the manufacture of gunpowder and iron-smelting.

Circumstantial evidence based mainly on the records of the Scottish royal court and of abbeys suggests that Scotland shared in the mild epoch from 1070 to 1300 but the temperature then declined sharply and by 1550 the climate was making husbandry difficult. The country suffered periods of unrest to which this decline in the weather is attributed. Soil deterioration, especially bog formation, following the forest burnings of the age, prevented re-establishment of the forest when the climate improved after 1700. The records of the corn harvest in the east of Scotland confirm this climatic improvement. "The Annals of Dunfermline, A.D. 1069-1878" provide valuable data on this aspect of Scottish history. By contrast, we know ships were built in Caithness around A.D. 950, suggesting widespread available timber in an area where one would not find it today.

The causes of the variation of climate noted in this article remain unknown. Several possibilities have been put forward; variations in the energy output of the sun, variations in seasonal values of solar beam strength caused by changes in the Earth's orbital movements, ellipticity, precession (the earlier occurrence of equinoxes) and tilt of the axis, changes in atmospheric wave patterns, changes in albido (the reflective power of the Earth's surface), volcanic eruptions sending dust into the upper atmosphere and reducing its transparency to the Sun's rays. Continental Drift could also have influenced the earlier Ice Ages, though not, of course, the weather of the last ten thousand years. The interaction of any of these causes and weather is very complex. For instance, an increase in solar heat energy reaching the Equator would warm the surface water and air, increasing the temperature difference between the Equator and the poles. In turn this would increase the activity of the mid-latitudes depressions and westerly winds. The result could readily be a lowering of temperature and increase in rainfall over Britain. In the long term, over a century or so, polar warming could take place and the depressions over the Atlantic would fall off again in frequency and intensity.

Man is dependent on stable climates - rapid change upsets ecology and agriculture, water supply, hydro-electric output and irrigation needs. Unhappily much of his present activity is likely to worsen the weather in many parts of the world for climate is quite finely balanced. We are in no position to predict future climates, but all changes in the past have been slow. There appears no reason to fear the sudden onset, within a few years, of an Ice Age, but even marginal changes could make life more unpleasant than it is for some, at least, of the Earth's inhabitants. The best forecast of, say, next summer's weather remains the average of, say, the last thirty summers. We can do no better than that.

Numerous articles in the Quarterly Journal of the Royal Meteorological Society and the magazine 'Weather' have been drawn upon as source material for this review, especially papers by Professor Gordon Manley, late of the University of Lancaster, and Professor H.H. Lamb of the University of East Anglia.

G. Reynolds

THE SMALL POND FOR AMPHIBIANS

Lately members of our own Society and of the Scottish Wildlife Trust have been taking part in a survey of the ponds in the Lothians, to find out what needs to be done to ensure the survival of amphibians in our area. The amphibians - frogs, toads and newts - are interesting animals in their own right, but are also important links in the food chain on which many of our birds and mammals depend. The results of the survey are most disturbing - ponds are being filled in, drained, or overgrown by vegetation, and the amphibian population is steadily declining.

In England, a survey was carried out with similar results, and this was followed by an investigation of the various sites in which frogs were breeding. It was found that the only habitat in which frogs increased during the 1960s were garden ponds. (See article in "The Field" dated January 31st 1974.)

Can we help by breeding amphibians in our own gardens?

We require at least a small pool, for which we must provide a waterproof container. We may decide to use concrete, but this is a messy and rather expensive business, though, if we are skilful, the result may be very pleasing. Concrete pools, however, particularly those with near vertical sides, are very liable to frost damage. Alternatively we may buy a ready made pool container of fibre-glass but they are rather expensive. I have no personal experience of them, but I have been told that the hollow into which they are to be fitted must provide uniform support, otherwise the fibre-glass may break when it is filled with water.

The most popular, and cheapest, method of making a pool is by using a flexible sheet of plastic or synthetic rubber as a liner. My own small pool which is about six feet by four uses a plastic liner which cost under two pounds three years ago.

Instructions for making the pool come with the liner, so I will not repeat them here. There is however, one snag which they do not mention. The cheaper plastics are liable to attack by sunlight above the water line, and may crack there. I have avoided this by running a strip of plastic just over a foot wide round the edge of the pool. This dips into the water to a depth of six inches, while the other edge is secured under the paving slabs which surround the pool. The strip is cut from some large green plastic bags from the garden centre, and has to be renewed at intervals. An unexpected bonus of this strip arrangement is that the amphibians like to hide under it, and one may find frogs, toads and newts all together there.

The pool should be reasonably deep. I made a mistake of having a very shallow portion in which birds could bathe, and this was in constant use throughout the dry part of the summer, up to 17 birds bathing at one time. But this caused fouling of the water and encouraged the growth of algae. So I am doing away with this shallow portion of the pool, and will make a separate bathing pool for the birds. If you decide to have a bathing pool for the birds - and it will increase both the number of species and the total number of birds in your garden - it must be in the open, away from vegetation behind which cats can hide.

Having got our pool filled, we require some water plants. Starwort, Canadian Pondweed and Water Crowfoot are all useful, while Brooklime, Water Plantain, Forget-me-not, Mint and Spearwort can be planted in earth containers. If our pool is large enough, it may have a Water Lily in the centre, but mine is so small that I have a small island (based on an old plastic bucket) in which I have planted a large root of Marsh Marigold which flowers over a fairly long period.

To procure our amphibians we must take care not to deplete ponds where they are scarce. However, there are quite a lot of ponds where the concentration is much too great, and many of the tadpoles do not survive. From these places we may take some spawn or a couple of pairs of frogs and toads with a good conscience. I got my newts from a reservoir which had been drained. The newts were hiding under stones in the hope that the water might return.

Once the spawn has hatched the tadpoles will probably find enough food in the pool to keep them going for some time, but as they near metemorphosis they may be glad of extra protein. Half a thimbleful of mince may be added to the water.

If there are enough water plants the pool should remain reasonably clear throughout the summer. We may, however have a growth of blanket weed which is difficult to deal with as we cannot use chemicals without upsetting the ecology of the pool. I meant to remove clumps of this weed from my pool this autumn, but found they were harbouring newt tadpoles, so they had to remain.

Towards the end of the summer the young amphibians will leave the pool, frogs first, then toads, and finally some of the newts - a few of the young newts may remain in the pool over the winter, together with some of the adult frogs which spend the winter in a torpid state, breathing through their skins, in the bottom of the pool.

Our youngsters will not return to breed in the first spring; most amphibians require three years to reach breeding condition. But a few half-grown specimens should encourage us to hope that a stable ecosystem may be formed in time.

I hope that some of our members, particularly those living near open country into which the youngsters may spread, will set up pools to provide a habitat for these interesting animals.

I.F. Sime

LOCAL WALKWAYS - A SHORT GUIDE

1974 was a year when, it can safely be said, the word 'walking' was on a lot of Edinburgh lips. The Slateford to Juniper Green walk, using the disused Balerno branch railway line, was completed by the Corporation, and our Society was very much involved in the 'Open Day' held in August. Midlothian County Council has been equally occupied in ensuring that the Juniper Green - Balerno section is retained for public enjoyment. An extension of the walk northwards from Slateford following the Water of Leith is expected to run into many problems of access but use can, of course, be made at present of paths near Saughton Prison, Saughton Park, Roseburn Park, St. Bernard's Well, Rocheid Park etc.

Renewed interest has been shown in the Union Canal and from the Redhall end of the Railway Walk it is a spectacular journey across Inglis Green Road, the Water of Leith and Lanark Road on the towpath. The sense of adventure is quickly lost after Slateford but none the less it is a novel way to walk towards town even if Harrison Park has to be the 'end of the road'. The route westwards is disappointing as the canal is quickly lost after passing Hailes Quarry. Part of Wester Hailes housing estate covers the route. However on the west side of the Westburn roundabout it can be picked up again and the canal remains peaceful and unbroken via Hermiston and Ratho until it is ruthlessly bisected by the M8 near Drumshoreland, Broxburn, after a six mile stretch. The canal is alternately bordered by agricultural land, both cultivated and grazed, and woodland which provide a variety of wildlife habitats.

At Lins Mill, now a private house, an aqueduct carries the canal over the River Almond at one of the river's most beautiful and dramatic reaches. Progress north on foot is difficult but not impossible and a good path extends south from Newbridge for about a mile. Near Turnhouse the path begins which, on right and left banks in turn, leads to Cramond. To the south of Lins Mill is the Almondell Country Park and it can be reached from the Union Canal with a scramble at either end of the aqueduct.

South of Edinburgh, Walkways are likely to be concentrated on the North Esk and the Penicuik - Hawthornden railway line. When the Society explored part of this area recently even a short walk revealed two railway tunnels, a paper mill, the ruins of Old Woodhouselee Castle and a few millponds, all between Auchendinny and Rosslyn Castle Station. A link from the line to the Roslin Gunpowder Mills is almost complete. From Roslin northwards the work of voluntary conservationists has made the Glen Walk more of an all weather one. From Polton a narrow path follows the left bank of the Esk, and other footpaths in the Kevock district lead to Lasswade. Farther north a good walk exists between Musselburgh and Cowpits and it still remains a possibility that access might be obtained at sometime through the Buccleugh Estate of Dalkeith Palace where the two Esks meet.

Finally a favourite walk near the disused railway between Gorebridge and Tynehead runs by the Gore Water in Borthwick Glen. The river meanders most of the way and the meadows are often thick with Gorse. From Birkenside it is an easy walk of one to two miles to Borthwick - a hamlet straight out of history with its feudal complex of castle, church and schoolhouse within the curve of the Middleton South Burn which feeds the Gore Water.

It is hoped that the good work of fostering public footpaths will continue under the reorganised local authorities.

J. Young

HOUSE MARTIN ENQUIRY

C.P. Rawcliffe is interested in investigating the distribution of the House Martin within the city boundaries, and invites the co-operation of the Members. The following information is needed:-

Site
No. of nests
Breeding success (if known)

Additionally, he would like to know if the site is new or a previously occupied one. It is hoped that our Youth and Junior Members will take particular interest in this enquiry.

SOME NOTES ON NATURAL HISTORY

The stranding of a Bottle-nosed Dolphin

In November 1971 it was reported that a 'large seal' had been found on the East Lothian coast at Scoughall. It was in a decomposed state. On investigation it proved to be a Cetacean carcase. (Cetacea are the group of mammals which include Whales, Dolphins and Porpoises.)

The animal was a male, nine feet long, measured from nose to flukes. Examination of the skull showed 23 tooth sockets in the lower jaw. The flippers were broad based with a rounded tip. The tail flukes had a notch in the middle of the hind edge; the tail stock was not compressed. The dorsal fin was missing and the body was so far decomposed that it was impossible to determine colouration, nor could the length of the beak be measured. The features noted enabled it to be identified as a specimen of Tursiops truncatus, the Bottle-nosed Dolphin. As all the teeth were missing, it is possible that it was an old animal.

Fraser in 'British Whales, Dolphins and Porpoises' (British Museum Publication) states that old animals are those most frequently stranded. He also cites Tursiops truncatus as the third most commonly stranded Cetacean on British coasts.

(For diagram see p.18)

R.J. Harper

An Unusual Occurrence of the Pygmy Shrew

On 14.2.74 a specimen of Sorex minutus was given to the author. The animal had been caught on the draining board in the kitchen of Garden Cottage, Castle Gogar. It had been noted during the previous week that small mammal droppings were present in the kitchen cupboards. The animal was considered to have entered the house where gas and water pipes pass through the wall.

Sorex species have a very high metabolic rate, (they have a daily rythm of approximately ten periods of almost continuous activity (chiefly hunting), to maintain their requirements, alternating with short periods of rest). Hawkins and Jewell (1962) found that S. minutus requires a food intake of 5.5-9.0 gm wet weight of food per day. As this species is an insectivore, it is remarkable that this animal was able to survive in domestic premises in winter. The normal diet of S. minutus includes a high proportion of woodlice, especially Trichoniscus, and includes some spiders and beetles; they generally reject insect larvae and springtails (Crowcroft, 1957).

I am most grateful to Dr. R.H. Bruce for bringing the specimen for identification.

References

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Hawkins, A.E. & Jewell, P.A. 1962 Food consumption and energy requirements of captive British shrews and the mole. Proc. Zoo. Soc. Lond., 138, 137-155.

R.J. Harper

'Dunkers'

For some time I had been surprised to find pieces of stale bread which my neighbour had thrown out for the birds lying in my small garden pool. Then I realised that they were being carried there by birds, and finally saw a Blackbird bringing a crust to soak. After a while, I began to find other items, including some very large tough worms, had been put in the pool to see whether a good soak would soften them. The most curious things were the remains of 'Devil's Coach Horse' beetles (Ocypus olens), of which the underparts had been eaten, and the hard head and abdomen, joined by what looked almost like a 'backbone', left to soak.

A friend across the road tells me that he has about his garden a very tame Blackbird which is in the habit of soaking crusts in the water lying in the 'rhones' (roof gutters) of his house.

Crows are also 'dunkers'. In a garden near the Zoo a crow was observed soaking bread in the birdbath. It broke its find into several pieces, which it buried in the flower borders. The habit is not confined to Scottish birds. My cousin, who lives beside the great park known as the 'Stray' in Harrogate, told me that she had thrown out the heel of a stale loaf on the lawn. Three Sparrows attacked it without success. Then a Crow came, lifted the bread into the shallow birdbath, and began pecking it. After a while it broke into pieces. The Crow flew off with the largest fragment, but did not return for the remainder.

I.F. Sime

In Edinburgh 1881 - 1882

From the Transactions of the Edinburgh Naturalists' Field Club - Vol. 1 -1881-2.
Page 9 Note on the Habits of the Spotted Flycatcher. Mr. A.B. Herbert

They are so very local in their habits that they are seldom seen more than about 200 yards from their nesting place. An instance of this peculiar habit may be observed in the Dean Cemetery where they breed regularly. You may go to the eastern part of the cemetery again and again and never see them; but within a hundred yards of the western entrance they are always to be found in the summer months, and their sharp staccato note greets you at once.

Page 44 Note on the roosting of the Peregrine Falcon on the spire of St. Mary's Cathedral, Edinburgh. Mr. Robert Stewart.

I think it may be interesting to members of the Club to learn that for some time past a Peregrine Falcon has regularly taken up its night on one of the small ornaments near the top of the spire of St. Mary's Cathedral. I first noticed the bird as it came along Melville Street, and on this, as on all subsequent occasions, it flew on a level with the tops of the houses until it reached the Cathedral, when a few steady strokes enabled it to occupy its high perch. The ornament referred to is not protected in any way, and it is astonishing to consider how it managed to retain its footing during the recent storms, as it is to find it there at all.

Page 202 Note of the appearance of Saury Pike in the Forth. Mr. A.B. Herbert.

Mr. Herbert brought under the notice of the Club the appearance in the Forth at North Queensferry of that peculiar fish, the Saury Pike or Skipper (Scombresox saurus), and exhibited several specimens sent by Mr. Walter Meek, the resident engineer of the Forth Bridge, who found one had darted with such force into the iron plates of the bridge that it was unable to extricate itself; and a few days later large shoals of them were observed and many captured... Their visits to the Forth are very irregular, but are always autumnal.

Coal-tit on Crown Imperial Lily

On 3.5.74 in an Eskbank garden a Coal-tit was seen to fly to a group of Crown Imperial Lilies (Fritillaria imperialis) - stout plants with stiff leafy stems about three feet high, crowned by a complete circle of reddish flowers. There it fluttered almost like a Humming Bird, while probing with its beak the base of the flowers which hang downwards. This action was repeated three times and each time the note uttered was a soft excited 'see-see-see'.

It was impossible to say if the bird was actually sipping the drop of sweet fluid, found at the base of each petal, or catching some insect inside the flower. The first supposition seems likely though, for, when the flowers - about a dozen - were examined later, no insects were found. And would a Coal-tit be so likely to give such calls when catching its normal insect food? Maybe the sweetness of the fluid was the cause. Crown Imperial Lilies are not at all common in the gardens in the Eskbank area.

E. Hamilton

A Misleading Sound

On 20.7.74 I was one of a party of E.N.H.S. members making a short hill walk from the A923 near Loch of Lowes to Dowally. Shortly after dropping down into a wooded glen in the north side, several of us heard a bird call, and thought it might have been the end-of-season call of a Green Woodpecker (Picus viridis). Unfortunately no one saw the bird. I might well have continuted to believe this, had I not met something similar that yielded a different answer.

On 9.8.74 being on the Heriot-Watt University site at Riccarton, in company with Isobel MacLean and my son, I was alerted by a call which I immediately suspected was the end-of-season call of a Green Woodpecker. We settled down to watch the strip plantation across the field from whence had come the puzzling call. Before long we saw an adult and two juvenile Kestrels (Falco tinnunculus); it was one of the young which had made the call, and this we were able to verify.

The moral of this story is, 'Hasty conclusions breed delusions'.

C.P. Rawcliffe

Henbane at Hedderwick

That botanist's paradise, the old rubbish dump at West Barns pool, was bulldozed flat and sown with grass in 1972 to make a caravan park. In 1972 and 1973 the concrete blocks, relics of our coastal defence system, were removed between West Barns and the Hedderwick Burn. The resultant disturbed ground, where it has not been sown with grass, is producing quite a good range of the plants which formerly grew in the rubbish dump. I was particularly pleased to see several seedling plants of Henbane, (Hyoscyamus niger), this Autumn. It is not a common plant though it has been recorded from the East Lothian coast at intervals during the past 100 years. (See Observation 22.6.74, Page 14).

Orginally of Mediterranean origin, Henbane was formerly much cultivated for its medicinal properties. In Britain it occurs locally on bare or disturbed sandy ground usually near the sea. Though a plant of interest to the botanist, it has neither colour nor pleasing perfume to appeal to the casual observer. It is a sticky, hairy plant with dingy yellow flowers veined with dark purple, and it has a strong nauseating smell. Henbane is a member of the Solanaceae, a family which includes the potato and tomato. All members of this family contain poisonous substances in at least some of their parts.

E.M. Smith

OBSERVATIONS MADE BY MEMBERS DURING 1974

9.2.74. A ringed Knot was found in Muirfield Bay at a time of very high tide and stormy conditions. The details were sent to the Museum of Natural History at Reykjavick who recognised it as an adult ringed in 1972 in the Myr district of Iceland. C.W.

Note The Knot (Calidris canutus) breeds in the High Arctic. It is a passage migrant and Winter visitor to Britain, where it is seen along the seashore and on mudflats and estuaries.

6.3.74. A Little Auk was found dead on the dunes at Yellowcraigs. It was in good condition, so Mrs. Hamilton took it to the Museum. C.S.

Note The Little Auk (Plautus alle) nests in the Arctic. Outside the breeding season, it remains out at sea, only occasionally being driven inshore and even inland by storms.

10.3.74. At 07.30 hours I saw a Grey Heron (Ardea cineria), standing by the Water of Leith at Stockbridge. As it had not flown in during the time I had been standing there, I can only assume that it had been progressing downstream and so had passed under the bridge. Once it had become aware that I was watching it flew away, under the bridge and on a circling route that took it towards Inverleith Park, then veering in the direction of the Royal Botanic Gardens.
C.P.R.

3.5.74 In the evening from a hide on the Dee near Threave, Castle Douglas, we watched a Kingfisher for nearly an hour. C.S.

Note The numbers of the Kingfisher (Alcedo atthis) became severely reduced in the hard winter of 1962-63, when nearly every stretch of fresh water throughout the country froze. Even now the populations have only recovered in a few areas, (R.S.P.B. Magazine 'Birds' Jan-Feb. 1974). There is gathering evidence that Kingfishers are more susceptible than most fish-eating birds to the toxicity of the industrial effluents which contaminate their prey, (K. Williamson, F.R.S.E., M.B.O.U. in The Shell Natural History of Britain).

11.5.74 A small Bat was seen over Gifford Water in full sunlight, feeding on insects and dipping into the water (to drink?). It was thought that it was a Daubenton's Bat, a widespread and common species often seen over rivers and lakes, but usually only flying about an hour before sunset or at night. M.W.

15.5.74 Toothwort (Lathraea squamaria) was found in Lady Lothian Wood, Newbattle, under a Yew tree, during the Bird Song outing. It was also found on 15.6.74 on the Bowhill Estate, under a Hazel tree. E.H. and J.R.

Note Toothwort is a total parasite. Its leaves are reduced to scales and its chlorophyll or green colouring matter has been lost so that it cannot, like a green plant, build up its own food substances - carbohydrates, fats and proteins - from carbon dioxide in the air and water and mineral salts in the soil. Its roots penetrate the roots of some woody plants, especially Hazel and Elm, absorbing nourishment from them.

25.5.74 While having lunch on the Corehouse S.W.T. Reserve, members were able to watch an Otter (Lutra lutra), on the stretch of the river just outside the Reserve. It was seen swimming, and fishing as it was noted later running along the stony bank with a large fish in its mouth.

25.5.74 Roe Deer on Wester Craiglockhart Hill. On the pleasant sunny afternoon of Saturday May 25th, with quite a number of people present, we visited the E.N.H.S. plantation on Wester Craiglockhart Hill. About 4 o'clock, as we were climbing the north slope, three Roe Deer, a buck and two does, came over the shoulder of the hill and ran down towards the houses and so out of sight.
C.P.R. and I.M.

13.6.74 Communal activity of tadpoles. On the warm sunny evening of 13.6.74 at a large still pool in the Moorfoot area, countless numbers of large black tadpoles were seen swimming through the clear water in a long stream, like a fat black snake, some three or four feet long and nearly a foot in circumference. The 'snake' swayed to right and left, up and down, as the unified mass formation moved through the water until out of sight, a distance of some six feet. Not one individual deviated in this time, either to leave or join the train. Close by at the bank the surface of the water was moving with gyrations of countless other tadpoles as they came to the surface or nibbled at the algae present. E.H.

22.6.74 Henbane (Hyoscyamus niger) was seen in flower on the coast at Ravensheugh Sands, East Lothian, by some members of the E.N.H.S. during the excursion to Tyninghame. (See note on Henbane page 12.) J.R.

22.6.74 After the Tyninghame outing two members went farther down the coast to the site of the proposed nuclear power station at Torness. There is a flourishing colony of the Yellow Horned Poppy (Glaucium flavum) on the shingle at the top of the beach there, and about 200 plants were seen, seedlings, or in flower.
R.J.H. and J.W.

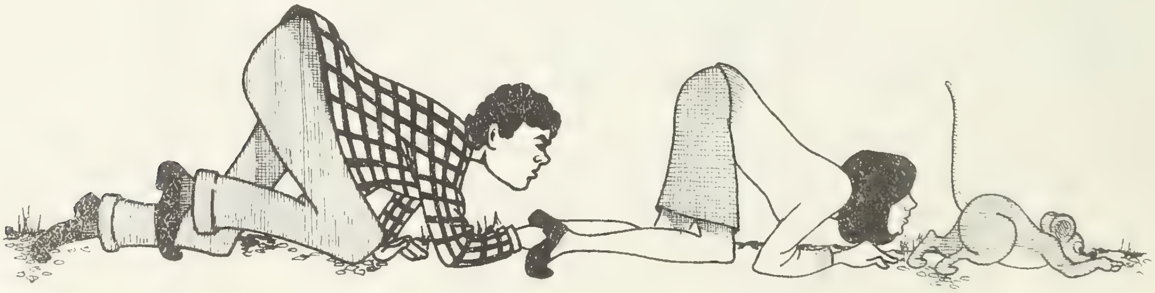
26.10.74 At the Hirsel, Coal-tits, Blue Tits, Marsh Tits, Great Tits and Long-tailed Tits were seen in one small spinney of 50 sq yards. C.S.

2.11.74 A Swift was seen at Gifford. C.S.

25.11.74 A flock of Waxwings five in number, was seen feeding on an ornamental Crab Apple tree near King's Buildings. The birds were seen again on the two days following. M.C. per E.H.

9.12.74 On a cold frosty night at about 9.30 pm a Hedgehog was seen foraging along the grassy verge of the drive of Winton Castle, Pencaitland. There had been frosts on the previous night, but this animal showed no sign of having been hibernating or wishing to do so. N.C.B. per R.J.H.

TO SEE OURSELVES AS OTHERS SEE US



WINTER INDOOR MEETINGS 1974

The speaker at the January meeting of the Society was Mr. W. Mykura of the Institute of Geological Sciences and his subject "THE BIRDS AND ROCKS OF SHETLAND". Mr. Mykura said that though he had gone to Shetland in pursuance of his work as a geologist, he had found that he could not ignore the bird-life which abounded in the islands as a whole, and so his lecture, though mainly geological, would have ornithological interludes. The islands were mainly composed of metamorphic rock. This was folded and recrystallised to form schists by the Caledonian earth movement, and great masses were forced into the metamorphic rock. The region Norway/Shetland finished off as huge mountain chains with large accumulations of sediment in the valleys. Since the last Ice Age the whole of Shetland has sunk about 50 ft and many valleys were drowned - hence the voes separated by long ridges of rounded hills. These were sometimes cut by 'causeways' - natural deposits of shingle and sand. Having given a vivid picture of the general geological history of the islands, Mr. Mykura, with the aid of magnificent colour slides, looked more closely at the interesting formations to be found in various parts of the islands among the metamorphic rocks. In particular he described Fetlar as a geological paradise with its mass of conglomerate on the eastern side.

Interspersed among the geological pictures were beautiful slides of Shetland's bird-life - the habitats of the different species determined largely by the geological nature of the territory. Altogether Mr. Mykura succeeded in making a complicated subject seem comparatively simple and immensely interesting.

"BIOLOGICAL STUDIES IN WESTER ROSS AND INDIA" was the title of Miss Ann Stirling's talk at the February meeting. Miss Stirling was attached to the Marine Laboratory, Aberdeen, and had been seconded to India for some months on a project. This was a comparative study of exposed sandy beaches in North West Scotland and South India, which formed part of an International Biological Programme study lasting five years, and involving an interchange of scientists from Aberdeen and Goa. During the first year, general studies had been carried out, and in the next four years groups of animals were to be studied in detail. Miss Stirling's party had studied the Indian beach "clam", Donax incarnatus, and compared it with the Scottish bivalve mollusc Tellina tenuis. Two differences had been very apparent. The tropical species were tidal migrants. Being shallow burrowers, they had to protect themselves somehow from the sun, and so moved fairly fast. Secondly the tropical species had a much faster growth rate and shorter life span. A previous study of flat fish had shown that unlike the molluscs, they had a similar growth rate and life span in the two countries. This whole talk was illustrated with many interesting slides.

Mr. Wm. Murray of Culterty Field Station near Newburgh, attached to Aberdeen University, was the speaker at the March meeting, and the title of his talk "ABERDEEN UNIVERSITY'S SPITZBERGEN EXPEDITION, 1972". This expedition was a joint effort of the Geology, Botany and Natural History Departments of the University to study the most northerly inhabited land in the world. Assembly point was Bergen in Norway and from there the party had travelled by the coastal steamer to the north of Norway, being joined by four Swedes, including a doctor. With the aid of the most beautiful colour slides (Mr. Murray was the official photograhper) he described the journey up the west coast of Norway, including the Lofoten Islands, special mention being made of the colony of Kittiwakes nesting on the buildings at Alesund, and of sea eagles swooping out from the cliffs to feed on offal discharged by the ship's galley. Sailing across from north Norway via Bear Island the party eventually sighted the snow-covered mountains of Spitzbergen and made their land-fall at the capital, a town of some 2000 inhabitants, the day before mid-summer. It seemed a very beautiful but inhospitable land.

The only mammals of the region are Reindeer, Musk-ox and Polar Bears. The party made camp at a coal mining settlement which had been abandoned following a disaster in 1963, and they were able to make use of some of the huts still left standing. Many visits were made to some of the off-shore islands to study the bird-life there, using the seal hunters' huts for shelter. Eider, Turnstone, Grey Phalarope and Purple Sandpiper were among the birds studied closely. Wherever birds had roosted and left droppings there were lichens and mosses to be found. Vegetation has a very slender hold in Spitzbergen. Plants found included the Arctic Poppy, Dwarf Birch, Dwarf Willow and Purple Saxifrage. Mr. Murray illustrated his talk throughout with magnificent colour slides and interspersed with lively anecdotes of humans and other animals. For him it had been the trip of a lifetime and he certainly conveyed this feeling to his audience.

"MEMBERS' NIGHT" was, as usual, held in April and the range of subjects covered testified to the wide range of interests coming within the scope of the Society. Mrs. Elspeth Hamilton gave the latest information of the S.W.T. Pond Survey; Miss Rosemary Harper spoke on her research into owl pellets; Mrs. E.M. Smith gave details of her research into the distribution of the various species of Bumblebee throughout Scotland,; Mr. Iain Gauld spoke of his interest in the invertebrate population of the Union Canal. For those interested in forestry, Dr. Wm. Fairbairn spoke on the Corstorphine Hill Survey and Miss Nora Henderson showed slides of the recent tree planting ceremony on Wester Craiglockhart Hill, and also of Glenfeshie. Geologist Mr. Ian Sime displayed cases of fossil shells, urchins and sponges. Ornithological tastes were catered for by Miss G. Montegomery who showed slides of nests of various species of birds, and also by Mr. Arthur Smith who described, with illustrations a visit he made to Sweden to study the remarkable **migration** of predatory birds each autumn. Finally Mr. P.W.G. Gunn showed slides of field excursions to the Cairngorms, the Solway area, and in West Lothian.

The A.G.M. of the Society was as usual held in October, and, following upon the formal part of the proceedings, the President gave a talk on her recent visit to Nepal, illustrating it with a selection of beautiful slides. These were arranged into three categories - some taken in and around Katmandu, some taken at a hill resort and others taken on a trek towards Everest. The slides were interesting both in form and content, and the racy commentary on the people, places and events made the evening a thoroughly enjoyable experience for all present.

It was with the greatest pleasure that the Society welcomed Dr. Michael Usher to the November meeting. Dr. Usher was a former member to whose enthusiasm and help the Society owed a great debt, particularly in his inauguration of the Journal: he is presently a lecturer at the University of York. The title of his lecture was "WILDLIFE AND INDUSTRY IN GHANAIAN FOREST RESERVES". Dr. Usher had been lucky enough in 1971 to embark on a 20-month working trip to Ghana. His work had been carried out in the middle of the forest area, which consisted of different habitats. First there was the sea shore area with groves of coconut palms, mangrove swamps and the lagoon country. Moving northwards there was the area of Savannah grass with some cattle. Then on the west there was the tropical forest, where the trees were fairly close and covered with masses of climbers and creepers. In the forest, sunlight was the living force - plus water and the nutrients in the soil - some trees grew up to 160 ft in height. Dr. Usher showed slides of some of the flowers of the forest including lilies and orchids and flowers which attracted insects, also climbers, such as parasitic fig and mistletoe, which relied on the trees for support. Among the animals of the forest, only the insects could be readily photographed, and of these Dr. Usher showed some interesting slides - a colony of caterpillers living on a tree trunk, of a Hawk Moth with a wingspan of four to six inches and several species of butterfly. Then there were the termites. These were the object of his real work in Ghana and Dr. Usher showed many slides depicting the life of these.

Lastly mention was made of the industries of the forest - the felling of trees; the cocoa growing and the processing of the beans and the production of the local beverage - palm wine. Throughout his lecture Dr. Usher showed many fine slides illustrating all aspects of his work in the forest region of Ghana.

Mr. G. Scott Johnstone of the Institute of Geological Sciences was the speaker at the December meeting, and his subject "THE GEOLOGY OF SOME SCOTTISH MOUNTAINS". His talk was a comprehensive study of the geology of the west Highlands and islands of the Hebrides. With a fine selection of colour slides he showed his audience many of the mountains in these areas including Ben More Assynt, the highest in Sutherland, which is composed almost entirely of Archaean gneiss, while other peaks further to the north are composed mainly of quartzite. Perhaps the best known however, are the mountains of Torridon in Ross-shire. The greater part of these are composed of red-brown Torridonian Sandstone and Grit laid down in shallow seas some 750 million years ago. The land from which these sediments were derived was made up of the ancient Lewisian Gneiss and, because of lack of vegetation in these primaeval times it was barren and so subject to heavy erosion. Despite their age, these Torridonian sediments have remained relatively unaltered and still show, in places, the typical cross-bedding of deltaic deposits. Glen Torridon is dominated by the great peaks of Beinn Eighe, Liathach (the highest) and Beinn Alligin, where the contrast between the red Torridonian Sandstone and the white Quartzite is of great geological interest. Mr. Scott Johnstone concluded his talk by referring to the Highland Boundary Fault or Highland Line, which divides the Highlands from the Lowlands, as shown in the changes in the rock structure of the hills in Perthshire.

N.F. Henderson

Extracts from 'Transactions of Edinburgh Field Naturalists and Microscopical Society' Session 1892 - 1893

Protection of Birds

I appear before you tonight to urge you all, and more especially the ladies belonging to this Society, to join the Society for the Protection of Birds ....

Every lady who never wears a bird or bird's feather in her bonnet is a practical member of the Society for the Protection of Birds: but ladies who desire cards of membership have to pay for them the sum of twopence.

Session 1897 - 8

On 29th October 1897 the Society opened its 30th Session with a conversazione.

During the evening Mr. T.C. Day gave a series of demonstrations on the X-rays by means of Crookes' tubes and also vacuum tubes which he had made specially for the purpose. The value of the X-rays in surgery was demonstrated when a leaden pellet lodged in Mr. Speedy's hand was clearly shown. At the same time Mr. Day showed by means of the spectroscope the new gases Argon and Helium, tubes of which had been loaned to us by Professor Ramsay, who is associated with the discovery of these elements. This was the first time that these had been exhibited in Scotland.

Note: The name of our Society was changed to 'The Edinburgh Natural History Society' in 1921.

The 'Society for the Protection of Birds' later became 'The Royal Society for the Protection of Birds'.

FIELD WORK AND EXCURSIONS - OUTDOOR ACTIVITIES

SURVEYS

BUMBLE BEE ATLAS SCHEME This is a National scheme, organised by the Bee Research Association, which has been in operation since 1970. See report p.29
Organiser - Mrs. E.M. Smith, 35 Hunter Terrace, Loanhead, EH20 9ST.

FORTH ISLAND BREEDING BIRD SURVEY The survey, which has been operating since 1959 covers five of the inner Forth Islands. See report p.24 and p.27.
Organiser - R.W.J. Smith, 35 Hunter Terrace, Loanhead, EH20 9ST.

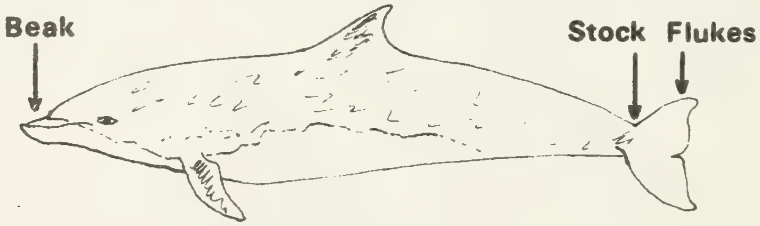
LOTHIANS BADGER SURVEY This is part of a National scheme organised by the Mammal Society. Help is needed particularly for the areas west of Linlithgow and for the whole of East Lothian, where the survey has only just begun.
Organiser - Mrs. E. Farquharson, 6 Chamberlain Road, EH10 4DN.

POND SURVEY The Society is assisting the Lothians Branch of the Scottish Wildlife Trust in locating ponds and breeding sites of amphibians. Helpers are particularly needed for East Lothian and in the Lammermuirs.
Organiser - Mrs. E. Hamilton, Woodridge, Ancrum Road, Dalkeith, EH22 3AJ.

SURVEY OF CORSTORPHINE HILL It is proposed to cover the Natural History of this area over several years. During the current year work will be concentrated on the small mammal populations. Work will also start on assessing the territories used by different groups of Badgers on the hill.
Organiser - Mrs. E. Farquharson, 6 Chamberlain Road, Edinburgh, EH10 4DN.

SURVEY OF INVERTEBRATE ANIMALS IN THE UNION CANAL The Invertebrate Fauna is being sampled throughout the year with the intention of identification to species level of some of the groups and assessing their distribution.
Organiser - I.K. Gauld, 57 Newington Road, Edinburgh, EH9 1QW.

WOODLAND SURVEY Assistance is being given to the Lothians Branch of the Scottish Wildlife Trust to survey deciduous woodlands in the Lothians. As this is in its early stages, help is required in all areas.
Organiser - J. Ballantyne, 6 Mansfield Road, Edinburgh, EH3 6NB.



Tursiops truncatus

EXCURSIONS 1974

As can be seen from the list below, the Excursion Committee arranged a wide, varied and interesting programme for 1974. The outings, with few exceptions, were very well attended by members and their friends.

The committee will be very pleased to receive from members suggestions for future excursions. (See back cover for names and addresses of excursion committee members.)

Key for excursions

B - Botany
E - Entomology
F - Fungi
Ff - Freshwater fauna
G - General

Ge - Geology
IBC - Island Bird Count
M - Mammals
O - Ornithology
S - Shore

On Saturdays and at the Weekends

January 12	Lagoons, Seabirds for beginners	O	Miss A. Reddin
February 23 & 24	Solway Weekend	O	Mr. H.S. Hughes
March 9	Longniddry - Aberlady	G	Mr. A. Mathieson (County Ranger)
April 20	Edgarhope circuit	G	Mr. G. Bell
May 4	Flotterstone Hill Circuit	G	Mrs. J. Walker
May 11	Pencaitland - Gifford	O & G	Mrs. M. Watson
May 18-20	Glenfeshie Weekend	M & G	The President Miss N. Henderson Mr. T. Parrish
May 25	Corehouse S.W.T. Reserve		Members of Clyde Branch
June 1	Hirsel	Cancelled	
June 8	Port Seton	S	Miss R. Harper
	Lamb and Fidra	IBC	Mr. R.W.J. Smith
June 15	Bowhill Estate (By permission of Buccleugh Estates Ltd.)	G	Mr. A.J. Smith
	Craigleith	IBC	Mr. R.W.J. Smith
June 16	Inchkeith	Cancelled	Mr. R.W.J. Smith
June 22	Tyninghame	S & B	Mr. D.H. Jones
June 29	Burnmouth Cliffs	B	Mr. J. Winham
July 6 & 7	Holy Island Weekend	B, S & G	Mr. G. Bell
July 13	Glen Lednoch - With Perth Society of Natural Science	B & Ge	Dr. C. Waterston (Royal Scottish Museum)
July 14	Ferry Hills to Inverdeithing	B	Dr. M. Thomson
July 20	Loch of Lowes S.W.T. Reserve	O & G	Mr. M. Drummond (Hon. Warden)
July 27	Roslin Circuit	B & Plant diseases	Miss J. Raeburn Mr. W.A. Hughes
	Moth Collecting with mercury vapour lamp	E	Mr. E. Pelham-Clinton (Royal Scottish Museum)
August 3	Gosford Estate	E	Dr. A. Sommerville (Scottish Wild Life Trust)
August 10	Menstrie Glen and Dumyat - Anderson Naturalists of Glasgow	G	Miss A. Reddin
August 17	Water of Leith - Public Open Day	G	See report page

August 24	Heriot Hill Walk Circuit	G	Mrs. E. Hamilton
August 31	Aberlady	O	Mr. C & Mrs. R.W.Smith
September 7	Barns Ness	Ge,O & S	Mr. R. Rigby (East Lothian County Ranger)
September 15	May Island	O	Mr. H.S. Hughes
September 21	Aberfoyle	G	Mr. H.S. Hughes
September 28	Bathgate Hills	G	Mr. T. Richardson
October 5	Craigie Woods	F	Mr. J. Carlyle
October 12	Yellowcraigs - Gullane	O	Mr. G. Carse

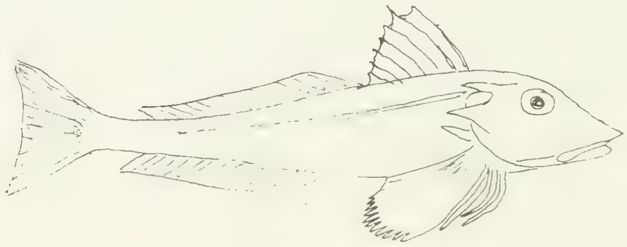
Evening Excursions

May 15	Newbattle Abbey Wood	Bird Song	Mrs. E. Hamilton
May 22	Canal at Meggetland	Ff	Mrs. E. Smith & Mr. I. Gauld
May 29	Cramond	B	Mr. J. Carlyle
June 5	Demonstration Garden, Royal Botanic Gardens, by permission of the Regius Keeper	B	A staff member
June 12	Corstorphine Hill - with Edinburgh Geological Society	Ge	Mr. C. Waterston (Royal Scottish museum)
June 19	Zoological Park - by permission of the Director	M	Mr. R. Wheater
June 26	Threipmuir	B	Mr. J.Winham
July 3	Water of Leith	Ff	Mr. I. Gauld
July 10	Pepper Wood	Cancelled	Mr. J. Carlyle
July 17	Joppa	S	Mr. D.H. Jones
August 7	Lagoons	O	Miss A. Reddin

Informal Excursions

In addition during the Winter Months the following informal excursions took place:-

January 26	East Calder	Mrs. C. Stewart
February 9	Aberday Bay	Mrs. M. Watson
March 23	Dalmahoy Hill	Mr. J. Young
April 6	Craigie Woods	Mr. G. Bell
November 16	Slateford to Juniper Green	Mr. J. Cruikshank



Gurnard

REPORTS AND EXCERPTS FROM REPORTS

Corstorphine Hill - Geology

This article is based on the joint excursion with the Edinburgh Geological Society, which took place on Wednesday, 12th June 1974. The excursion was led by Dr. C.D. Waterston of the Royal Scottish Museum, Edinburgh.

General description of the area

During much of the Carboniferous Period, the Edinburgh area was covered by a shallow brackish sea. Into this shallow sea, rivers deposited great quantities of sediment. At the river mouths deltaic conditions prevailed. The area at this time was passing through a period of slow subsidence. These sedimentary deposits were to become the sandstones, shales, limestones and coals which we can now see exposed at various outcrops throughout the district. Subsequent volcanic activity generated much igneous material which was either extruded onto the land surface as lava flows or was intruded into the rock strata below the ground in the form of either dykes or sills. Corstorphine Hill is one of these intrusive sills. The volcanic rock of the sill is of a type known as olivine dolerite though its composition varies and at an exposure which used to be seen in the Barnton railway cutting, it has become picrite. This sheet-like volcanic intrusion was injected into the sandstones and shales of what are described as the Wardie Shales Group. The Wardie Shales Group are part of the oil shales series and this places its members in early Carboniferous times. For many million years the volcanic sill lay buried beneath the ground until, because of erosion, the overlying softer rocks were removed and the sill partly exposed. Though most of the erosion was executed by sub-aerial processes, the final erosional force was by movement of ice. During the last Great Ice Age some 12,000 years ago, the ice cap, which covered Scotland, moving in an easterly direction, finally sculptured topography to a land form very similar to what we know nowadays.

The party now made their way over the area stopping at the various points described below, while the leader discussed the geology.

Viewpoint Looking East

At this point, looking towards the Salisbury Crags Sill with the Corstorphine Hill Sill behind us, the leader explained the difference between the two sills and how they came to be formed. Between the two points mentioned above, is an eroded anticline with the Corstorphine Hill Sill intruded into its western limb and the Salisbury Crags Sill intruded into its eastern limb. The Salisbury Crags therefore dip to the east while Corstorphine Hill dips to the west. This difference in dip had a profound effect upon the topography, for when the ice sheet moved eastwards over the area it slid over the top of the Corstorphine Hill leaving it with a smooth rounded shape, but as it moved over Salisbury Crags it met the opposing dip of the sill forming the now well known west facing crag with its tail pointing to the east. This crag and tail effect is a very prominent feature and is well demonstrated by the classic example of Edinburgh Castle and the Royal Mile.

Path at North Side of Hill

Here we paused and were able to examine the sediment which underlies the sill. The sediment at this point had been baked by the searing heat of the magma as it was injected above it. There is no known exposure which demonstrates the junction between the upper surface of the sill and the sediments above.

Viewpoint Looking to the South

From this point we obtained a first class view across the flat land which rises gently until reaching the Water of Leith, then steeply to form the Pentland Ridge. Much of this flat land is the site of a chain of Post Glacial lochs, which stretched from the old Nor' Loch westwards out to the Gogar Loch. The Corstorphine Loch which was by far the largest of the Edinburgh Lochs, is of great interest because within its lacustrine deposits are contained the clues which give some indication, not only of the flora and fauna of the area during the immediate Post Glacial times, but even some indication of the prevailing weather conditions. One authority is of the opinion that the area was more of a marsh than an expanse of water. Arctic plants including Willow species, (Salix polaris, S. herbacea and S. reticulata), the Dwarf Birch (Betula nana) and the White Mountain Avens (Dryas octopetala) as well as the remains of animals such as the Lemming, primitive Ox, Irish Elk and a variety of beetle have been extracted from the lacustrine beds.

Viewpoint Looking West

At several points at the top of the hill further evidence of the eastward passage of ice can be seen in the form of areas of smooth bare rock known as glaciated pavements. Gouged out of a number these pavements are a series of long fluted markings orientated in a general east-west direction. These remarkable surfaces have been known for many years, but their origin was uncertain until 1840 when Agassiz, after visiting this and two other localities pronounced that this was the work of land ice. Until this time there had been many theories as to their origin. One of the earliest concerned what was called a 'diluvian wave' sweeping across the area with the rock carried along by it making the grooves and the other features which we now attribute to the work of land ice. Another theory which lay somewhere between the last theory and what is now accepted as the truth, involved masses of sea-carried ice which floated over the area grooving and polishing the land surface as it passed. It is now, of course, accepted that the ice was land ice, which smoothed and polished the land surface by means of pebbles and sand carried along in its base.

On account of its geological, botanical and consequent educational value, it is important that Corstorphine Hill area be properly managed.

At the conclusion of this excursion, the leader was given a vote of thanks by Mr. Hogarth of the Edinburgh Geological Society.

G. Bell
I.F. Sime

Birds of Corstorphine Hill

This is a continuation of the report given in the 1973 Journal - see p.26.

There have been no rarities to add to last year's list of sightings of birds on Corstorphine Hill, in fact the only additions to that list are three which surely only by chance were not spotted earlier - Collared Dove, Pied Wagtail and Tree Sparrow. On the other hand, not every species on the list has been recorded this year, but it is hoped that this has been due to insufficient coverage rather than a diminution of bird life.

Regrettably, the large quarry at the south-east end of the Hill is now being used as a Corporation rubbish tip and this led to the disappearance of the Jackdaw colony throughout the summer. But this month (November) has seen the return of a few birds to their old haunts, so perhaps they will learn to live with this degree of disturbance.

M. Watson

Analyses of Tawny Owl Pellets from Corstorphine Hill
April 1973 - January 1974

As part of the study to investigate the possibilities for long-term projects on the natural history and ecology of Corstorphine Hill, Tawny Owl pellets were collected and analysed from April 1973 to January 1974. A resume of the findings is given here, and more detailed results will appear in another publication.

Prey species (mammalian, avian and invertegrate) are expressed as a percentage of the total prey during the months under consideration. This value was obtained by weighing each pellet to obtain the wet weight (weight of the sample after 24 hours in an unheated room), and then dissecting the pellet and weighing the component parts. This leads to certain inaccuracies in some classes of prey - if owls have taken earthworms or beetles, or any animal with sand or gravel in its gut, this debris is often rejected in the pellet. Sand and gravel were not reweighed unless they formed a high percentage of the pellet and were found in association with setae. This was an attempt to eradicate error in assuming that if sand were present, worms had been taken, irrespective of the presence of setae. It may have led to the error of ignoring soil consuming insects. Worm setae are too small and fragile to weigh accurately, so the percentage value is only an estimate in this case.

Hair was weighed separately. Up to the time of writing, no attempt had been made to identify species by hairs present, as this requires specialist analysis using gelatine peels. This will be done later, but it was assumed here that all hair found belonged to the species represented by skeletal material. The weight of hair has therefore been re-allocated proportionally between mammalian species present on a %/skull/pellet basis. This may be inaccurate but it is not considered significantly so.

No conclusions have been drawn on seasonal variations in the diet of Tawny Owls on Corstorphine Hill. Insufficient numbers of pellets were analysed for this to be done satisfactorily. When the full survey (hopefully in October 1974) the analysis will carry over a three year period. This should enable a good seasonal comparison to be made of the diet.

Species	% Prey
Mammals	
Microtus agrestis (Field Vole)	15
Clethrionomys glareolus (Bank Vole)	20
Apodemus sylvaticus (Wood Mouse)	10
Talpa europaea (Mole)	5
Rattus norvegicus (Brown Rat)	5
Mustela nivalis (Weasel)	5
Birds	
Passer domesticus (House Sparrow)	6.5
Fringilla coelebs (Chaffinch)	5.5
Sturnus vulgaris (Starling)	5.5
Indeterminate bone and feather	10
Invertebrate	
Beetles	3
Sand and gravel (estimate for worms taken)	8
Indeterminate	1

From this table it is apparent that mammals constitute the major part of prey items taken. It is interesting to note the large proportion (27.5% total) of birds taken in the pellets analysed. Glue (1971 & 1972) and Macdonald (1969) state that in an urban environment bird prey becomes important in the diet of

Tawny Owls. It would seem that the owls on Corstohphine Hill confirm this finding.

As stated before, it is hard to assess accurately the amount of worms and other invertebrates taken. It is thought by some authors (Southern, 1954) that worms form an important part of the diet of Tawny Owls at certain times of year. This study has not revealed this, but with a prolonged period of analysis, and an improved technique, this problem may be overcome, and the true importance of invertebrate food elucidated.

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R.J. Harper

Forth Island Bird Count 1974

	Craigleith	Lamb	Fidra	Inchkeith	Inchmickery
Fulmar	90	2	60	405	
Cormorant	22	206			
Shag	225	255	27	1	
Oystercatcher			6	3-4	1
Gt. Black Back	1				
L. Black Back	c350	c5	30	x	
Herring Gull	x	c550	c350	x	6 nest left
Kittiwake	c450	141	272	421	
Common Tern					750
Roseate Tern					80
Sandwich Tern					450
Razorbill	46	11	1	12	
Guillimot	c1000Bds	c400	9+ 12 bds	(6 bds ashore)	
Puffin	1170Bds			490Bds	

Fulmars - Occupied sites, not necessarily breeding
Craigleith Guillimots - birds on the cliff
Puffins - birds on the land and off-shore
All others - pairs or nests
x - present but not counted; c - about
The Inchmickery figures are the final RSPB counts.

1974 was the 16th year of the Island counts and the most inauspicious. The Inchkeith and Inchmickery trips were first postponed because of the oil shortage and then cancelled because of bad weather. Fortunately I was able to visit both islands independently. The Inchmickery count is the final one made by the RSPB who have kindly allowed me to use it here.

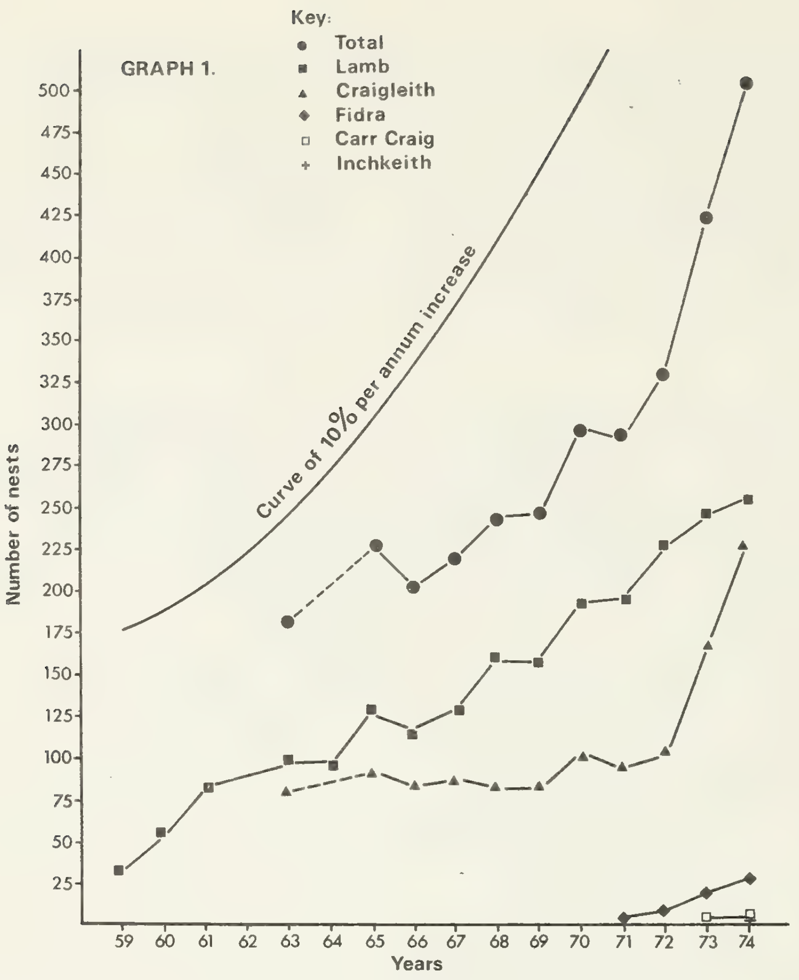
In 1958, when the idea of annual visits to these islands was first mooted, we had a grandiose plan to tour the Forth in a borrowed boat. We were to sleep aboard and drop anchor as and when we pleased! The boat did not materialise and the first trips to Fidra and Lamb were made by Craig Tait and myself in a borrowed canoe. It took several years before the initial uncertainties of boat bookings and counting priorities were overcome. The trips have now become routine - except for our unpredictable Summer weather. There may be a feeling that counting too, is merely a routine undertaking and that, when the figures are jotted down in a field note-book, they are tucked away in a drawer, unused. Members who have been on the trips may be interested in some of the ways in which the counts have been used.

We provided information for the National counts of Fulmar and Kittiwake colonies in 1959 and for the ambitious Seafarer Survey of 1969, which attempted to count all of Britain's breeding seabirds. After the disaster when the Sandwich Terns breeding on the Dutch coast slumped from 40,000 pairs to 1,100 pairs in a few years because of poisoning by toxic substances, there was concern about the status of British breeding Sandwich Terns. Information on this species was asked for, and we provided it for the Forth for several years. Since then there has been increasing anxiety about PCBs (Polychlorinated Bi-Phenyls) and other toxins in the sea, about oil spillage and other hazards of modern civilisation. There is now a monitoring programme of breeding seabirds in selected areas of Britain and our island counts play their part. Data from the counts were used in my paper on Scottish Cormorant colonies and in a paper on Sandwich and Roseate Terns by G.L. Sandeman, both in Scottish Birds. Counts of Shags were provided for several years to D.R. Potts (now Dr.) at Durham University who was studying these birds. Information on Roseate Terns was sent to Dr. Cabot in Eire who is enquiring into the recent decline of these species in the British Isles. Our experience of the big gulls has been traumatic but useful. During the discussions that preceded the decision to cull the gulls, first on the May and then on Inchmickery, we feel that our opinions and counts helped, in a small way, to clarify the situation. The counts on the RSPB Reserves are, of course, submitted to the RSPB and, indeed, provide their only information on the Lamb and, until recently, on Fidra. Information was provided for the BTO Bird Atlas and is now helping the present Habitat (or Sites) Survey. The most recent appeal came from someone who was 'undertaking a dissertation for Part II of the Cambridge Geography Tripos'. Thanks to the figures in the field note-book it was easy to provide the required details.

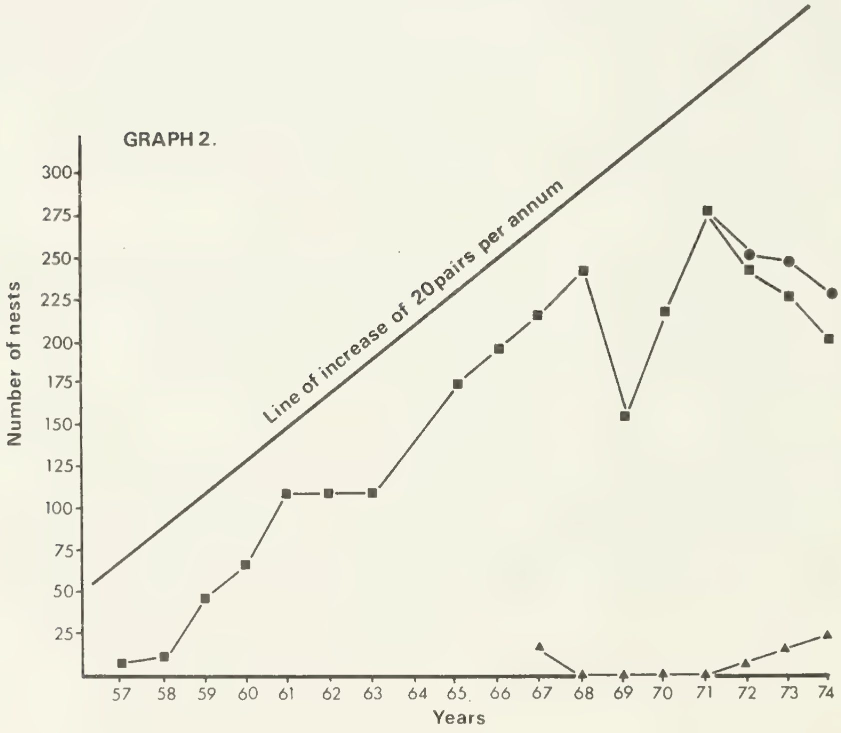
Apart from the intrinsic interest of documenting the increase and spread of our local seabirds I hope that the above 'spiel' tends to prove that these counts have a definite conservation value and are of more than local interest. I trust that future boat-trips will have enough support to ensure that the routine counts may be continued.

The most interesting aspect of the counts this year is the continued increase of Shags. This is dealt with in the article which follows. Auks continue to do well with a small increase of Guillimots on Fidra and the first breeding there of Razorbills. On Inchkeith, Razorbills are slowly increasing; Guillimots were on the cliffs at two separate points though they have not yet been proved to breed. Puffins continue to do well and the RSPB reports a late egg on Fidra. This island is suitable for Puffins and there could be a substantial colony there in future years.

R.W.J. Smith



Increase in numbers of breeding Shags on some Forth Islands



Cormorants and Shags

Forth Islands Counts - Cormorants and Shags

Cormorants were reported nesting on the Bass in the 19th century but otherwise there is no record of them having bred in the Forth. In 1957 Fred Marr found five nests on the Lamb and he reported eight nests in 1958. On our first trip in 1959 there were 44 nests and the graph shows a rapid build-up to a peak of 280 in 1971. Cormorants do not breed until their fourth or fifth year so that it would be about 1965 before any birds bred in the colony would have contributed to this increase. The fairly regular steps on the graph are broken by the years 1962 and 1963 when numbers appeared to be static at ca. 110 pairs. No count was possible in 1964 due to bad weather but the next year saw a big increase to 177 nests. The interesting point is that this jump in numbers brought the increase back to its average of roughly 20 pairs per annum. Since the 1971 peak there has been a slight fall in total numbers.

There seems little doubt that the colonisation of the Lamb was made by birds from the Farnes. There had been a lot of disturbance of the birds there by fishermen collecting Herring Gulls' eggs. When a Cormorant colony is disturbed most of the adults leave the nests and fly around until the disturbance is over. The gulls swoop down and take many of the exposed eggs and tiny chicks. One prolonged visit to a colony in May means that most eggs will be predated and egg-laying has to begin all over again. In 1969 a yacht landed on the Lamb in May, and a photographer in early June. No young at all were reared in that year. An agreement was reached with the RSPB and with the co-operation of the boatmen, that no one should land on the Lamb until about the 10th June to prevent this sort of total destruction of eggs and ensure that reasonable numbers of young are reared.

In 1969 after the disaster on the Lamb, some 30 pairs of Cormorants moved to Craigleith and bred there but were only a few young in August. Since then a few have attempted to nest in most years but there is too much disturbance by visitors to this island and gulls take most of the eggs. This problem of gulls predation when the adults are disturbed will probably ensure that the Lamb remains the only island where Cormorants will find peace to nest.

When I was investigating the Scottish Cormorant colonies in 1967 it was noticeable that there was a top limit of 250-300 pairs in any colony - with the exception of the Ord of Caithness colony of 450 pairs which are scattered in groups along some three miles of cliffs. The levelling off of numbers in Forth after 1971 was not, therefore, unexpected. It does help to confirm that there is an optimum level for most of our big colonies although it throws no light on the reason for this.

George Waterston found two pairs of Shags nesting on the Lamb in 1955. In 1959 there were 35 nests and there has been a steady increase to the 1974 total of 255 nests. On Craigleith there was one pair breeding in 1933. They were nesting in good numbers in 1959 but we had considerable difficulty in a satisfactory count as most of them were below the sheer east cliff. Eventually we found it was easier to count them from the top of the cliffs than from the heaving boat and our first reasonable count was of 82 pairs in 1963. There was little change over the next six years then, after a slight increase, there was a sudden upsurge in numbers in both 1973 and 1974 which more than doubled the population there. During this same period there was a corresponding expansion to new islands with Fidra colonised in 1971 (27 pairs there by 1974), Carr Craig in 1973 and Inchkeith in 1974.

The flat ledges under the sheer cliffs of Craigleith are probably the favourite type of nesting site for Shags. These were occupied many years before the first nest on the Lamb. There would probably have been a good sized colony during the war years and yet, during the ten years from 1963 to 1972 there was a total increase there of less than 25%. The Lamb, colonised at the end of the war, was able to provide an adequate number of sites for many years and thus accommodate the increase of population. There was an overall annual increase there of roughly 13% during the 16 years of the counts. This increase was not constant every year. The graph shows a drop in numbers in 1966 and no rise in 1969 and 1971. These checks on the population growth are mirrored by the Craigleith graph. Some of the checks may be explained from the experience of the Durham University group who were conducting a full-time study of the Farnes Shags. A 'crash' of Shags was reported there in the winter of 1965-66 with many birds dying - probably of food shortages, during prolonged rough weather. In May 1968 the Farnes birds were hit again when there was an outbreak of paralytic shellfish poisoning caused by a superabundance of some dinoflagellates. These produce a toxin which killed about 4/5ths of the Shags breeding on the Farnes, but fortunately there was no apparent large 'kill' in East Lothian.

As with any other species, winter mortality is normally much higher among immature Shags than adults. Probably this mortality is due mainly to a shortage of food during inclement weather and obviously survival is high enough in most years to allow a rapid increase in breeding strength. During the last few years the winters have been exceedingly mild and calm. This may be the reason for the sudden 'bursting at the seams' of the population. The Lamb was becoming increasingly crowded by the early 1970s and a large group was established on the less suitable west side. So most of the increase of the last years has been on Craigleith with pioneering groups going farther afield. Both the Bass and the May have, of course, big and increasing Shag colonies and it is not known whether they are contributing to this expansion.

Since 1963 Shags have been increasing on our islands at an average rate of 10% per annum. This is consistent with Pott's estimate of an average increase over the whole Forth/Farnes area of 11% per annum since 1905, from ten pairs to 1900 pairs. Various suggestions have been advanced to account for this dramatic increase. The most attractive one is that the bird is profiting, along with many other seabirds, from the decline in human persecution. There is obviously still an abundance of available food and one wonders when the population will reach its ceiling. There seems to be no optimum level imposed by colony 'tradition' as with the Cormorant. Will the number of suitable nest sites be used up before the available food supply?

R.W.J. Smith

News from Riccarton

Once again regular watching on one area has proved rewarding. A special effort was made in 1974 to determine what species bred. This resulted in 18 cases of proved breeding: among the species were the Little Grebe or Dabchick was found just outside the boundary. On 2.3.74 a Merlin was seen briefly. Roe Deer, Badger and Fox have all been sighted, whilst on 9.8.74 a freshly killed Weasel was found. It had been decapitated and the head was close by. A Kestrel was suspected of the deed. Very dark Water Voles were seen along the Murray Burn. Edward Step says that some authorities recognise these as a separate sub-species, Arvicola amphibious reta. Damsel-flies (Zygoptera spp.) were seen over the pond for the first time. They can be distinguished from true Dragonflies (Anisoptera spp.) for when at rest they hold their wings vertically whereas true Dragonflies rest with wings outspread.

The new plants for us were Wild Angelica (Angelica sylvestris) and

Royal Fern (*Osmunda regalis*). The 'Oyster Mushroom' (*Pleurotus ostreatus*) which once grew abundantly on a dead Sycamore, and was so good to eat, has died away.

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C.P. Rawcliffe

Bumble Bee Atlas Scheme
Organised by the Bee Research Association

Though the field work for this, the last season of the scheme, is now complete, many of the results have yet to be written up and sent to Dr. Alford, the Editor of the Atlas. The data will then be related to past records and current trends in different parts of the country. There are two data categories for the records - pre-1960 and 1960 onwards.

It appears that, of the 18 British Bombus species, 14 occur in Scotland and of those, 11 have been recently recorded from the Lothians. They are *Bombus hortorum*, *B. jonellus*, *B. lapdarius*, *B. lapponicus*, *B. lucorum*, *B. magnus*, *B. muscorum*, *B. pascuorum*, *B. pratorum*, *B. soroensis*, and *B. terrestris*. There are six British Psithyrus species, the Cuckoo Bees, four of them occur in Scotland. We have yet to find *P. barbutellus* in the Lothians though we have recently recorded it in Lanarkshire and in Fife.

It has been my privilege and pleasure to be allowed to examine the study collection of Bumble Bees in the Royal Scottish Museum. In this collection there are no Scottish pre-1960 records of *P. campestris*, other than the local variety *P. campestris swinnertoni* which occurs in Argyllshire. There has been a northwards extension of *P. campestris* with recent records from the Borders, Berwickshire, the Lothians and Fife. *P. campestris* parasitises *B. pascuorum* which is a common and widely distributed species, though less common in the north of Scotland. Also in the R.S.M. collection are pre-1960 *P. rupestris* specimens from the coast between Longniddry and Tantallon. This species is parasitic on *B. lapidarius*. Although *B. lapidarius* is still with us on the coast, *P. rupestris* has not been recorded in recent years from this area. The R.S.M. collection shows that *P. distinguensis* used to occur in Berwickshire, in Mid- and East Lothian and in the inland counties of Roxburghshire, Perthshire and Kinross as well as the Outer Isles. Recently in Scotland it has been found only on the north and west coasts and islands.

B. soroensis has a very sparse, scattered and little understood distribution. This season J. Carlyle found one at Swordale in Ross and Cromarty, A. McDonald recorded them on Iona and I found one at Loch Awe near Dalmally, another at the Whiteadder Reservoir in East Lothian and one near Whithorn in West Lothian. *B. soroensis* is so like the very common and well distributed *B. lucorum* that it can easily be missed in the field. Though not common it may be more widely distributed than the records to date seem to indicate.

Grateful thanks are acknowledged to all who have helped locally or during their holidays in carrying out the survey.

E.M. Smith

Gosford Estate - Entomology Outing 3rd August 1974

During the afternoon, Dr. Sommerville of the Scottish Wildlife Trust demonstrated and explained methods of catching insects. These were sweep netting, using a beating tray and a pooter. Over 30 species of insect were caught and examined, including five common Bumble Bees, Bombus lucorum, B. pratorum, B. agrorum, (now B. pascuorum) B. hortorum and Psithyrus bohemicus.

Members joined in the collecting and found the introduction to common insects and their life cycles very rewarding.

References

Chinnery, M. 1973 A Field Guide to the Insects of Britain and Northern Europe.

E. Hamilton

Solway Weekend - 22nd-23rd February 1974

A party of about 40 members of the Society, including the President, Mrs. E. Farquharson, visited Caerlaverock - Loch Ken area on the 22nd and 23rd of February, making an overnight stay in Castle Douglas.

Mr. Harald Hughes was in charge and with commendable punctuality we left Waverley Bridge by coach at 8 am on a sharp, clear frosty morning. After a brief stop at Moffat for coffee - there were doubtless some hurried breakfasts that morning - we drove on through sunlit countryside to Southerness on the Solway, noting nearby some 90 Whooper Swans in a water meadow. We picnicked in warm sunshine on the shore, looking over the calm blue water of the firth to the hazy outline of the Cumberland coast.

In the afternoon we visited East Park Farm and were shown round by one of the Wardens. The farm is on lease to the Wildfowl Trust; to it belong six hundred acres of merse which comprise the sanctury area of the Caerlaverock National Nature Reserve and two hundred and thirty-five acres of arable land which the Trust is managing as an extension to the Refuge. Beside the old farm buildings is an excellant two storey observation hut overlooking several large pools where a most exciting gathering of ducks and geese could be seen at close range. Whooper, Mute and Bewick Swans were present; also five species of wild goose, Pinkfoot, Greylag, Brent, Whitefront (Greenland form) and a Snowgoose. The ducks were equally fine including Shoveler, Pintail and Gadwall.

Our next observation point was at the end of a sheltered lane in a tall hide overlooking the merse, the principal winter resort of the Spitzbergen population of the Barnacle Goose. Greylag as well as many Barnacle Geese were seen on this occasion. Afterwards we all had a last look at the pools before we resumed our way to Castle Douglas to spend the night.

On Sunday morning - a grey unpromising morning - our first visit was to Carlingwark Loch where good views were had of two pairs of Goosander, Goldeneye, Pochard and other ducks. We continued by bus to Lodge of Kelton farm on Threave Estate. This estate belongs to the National Trust for Scotland and is an important wildlife refuge. We were met by the Warden who took us by the Lodge Railway Cutting over the bridge onto Lamb Island. Here, from the shelter of the trees and a hide we could watch the wildfowl on the River Dee. Someone was lucky enough to catch a glimpse of a Kingfisher. Goldeneye and Wigeon were present as well as flocks of Oystercatchers and Curlews on spring movement.

On the bus once more to Loch Ken, to Balmaghie Church. While waiting for the good folk to leave the kirk and for a heavy shower to pass, we picnicked in our bus before visiting the church yard which, situated on a knoll above the loch, is a fine vantage point for bird-watching. But there was little to be seen at the time save the small purple crocuses in flower between the gravestones and the soft outlines of the Galloway hills through the light rain.

We drove on round the loch, stopping at Woodhall Loch and other good spots for birds. A Willow Tit was claimed, also a Slavonian Grebe and two Buzzards. A marshy bay was found with many Pintails and several Shoveler feeding. Goosander and Goldeneye were seen too. As dusk was falling, near Crossmichael we caught a glimpse of a Barn Owl.

To end the day we returned to the Market Inn at Castle Douglas, there to enjoy a welcome and satisfying high tea before our coach journey back to Edinburgh. We all felt it had been a most rewarding and interesting weekend and thanked Mrs. Stewart and Mr. Hughes, of the Excursion Committee, for the work and organisation which had made it possible.

E. Hamilton

Glenfeshie Weekend 18th-20th May 1974

The Glenfeshie Estate extends to some 42,000 acres, and is owned by West Highland Woodland Ltd., and is managed by Lord Dulverton. The area to the north of the River Feshie is covenanted land of the Cairngorm National Nature Reserve. The entire estate is being managed by the Owners in co-operation with the Nature Conservancy (now Nature Conservancy Council), with the long term aim of upgrading the land in terms of reafforestation, deer management, and limited stock grazing, while at the same time conserving the wildlife of the area. This then was one of the areas visited by some 35 members in May. We had learnt much about Glenfeshie from Mr. Tim Parrish who was one of our speakers during the winter and who was with us during our visit on the Saturday. Our party divided into two groups - one under the guidance of the Head Stalker, undertook a hill walk, while the other group did a more gentle walk up the valley of the river to the head of the glen. In this part of the glen we saw the stone chimney (all that remains today) of the bothy where Landseer's famous fresco was drawn. Just above the fireplace one small patch of plaster, less than the size of a saucer, is all that is to be seen of it. On parts of the side of the glen we saw woods of native Scots Pine (Pinus sylvestris spp. scoticus). Where some erosion had taken place at the edge of the path the shallow roots, which enable the Pine trees to grow on poor rocky soil, were exposed.

Birch trees (Betula spp. chiefly B. pubescens) grew within the woods and also, along with the Mountain Ash (Sorbus aucuparia), higher up on the steep rocky sides of the glen. Bushes of Juniper (Juniperum communis)- a dark green, prickly shrub - grew under some Pine trees, and in untidy clumps in more open spaces, some having no leaves below a certain level as these, we were told had been eaten by deer. Also under the Pine trees there were plants of Bilberry (Vaccinium myrtillus), with its angular twigs and almost globular greenish pink flowers which, later in the year would develop into the well known black, juicy fruits. In the wetter margins of the Feshie Burn we saw some Alder trees (Alnus glutinosa) which we recognised by their stalked buds and their dark brown female catkins, a year old. Where no trees grew the ground was covered with the species of grasses typical of acid soil. These were not yet in flower. It was also early for other plants, but we did find some flowering, including Common Dog Violet (Viola riviniana); Marsh Dog Violet (V. palustris); Tormentil (Potentilla erecta), with its four-petalled yellow flowers, so characteristic of acid soil; Heath Milkwort (Polygala serpyllifolia); Mountain Everlasting (Antennaria dioica) with separate male and female heads of flowers on different plants, (we saw much more Mountain Everlasting on the golf course at Newtonmore); Moss Campion (Silene acaulis) - a few flowers of this plant were out; Marsh Marigold (Caltha palustris) in the wetter parts. Among the rocks we found several ferns including Hard Fern (Blechnum spicant), Lemon Scented Fern (Thelypteris limbosperma) - now known as the Mountain Fern, Brittle Bladder Fern (Cystopteris fragilis) and Broad Buckler Fern (Dryopteris dilatata). Sphagnum moss was plentiful in the wet hollows of the surrounding ground near the burn.

Glenfeshie is at present part of a great laboratory for the study of Red Deer. Large numbers of animals readily use the artificial feed provided for experiments in stock improvement. Mineral licks are placed on the high moorland, and protein concentrate pellets are given daily from October to May near the Head Stalker's house on the lower part of the glen. At the end of our day, our interest centred round this feeding place, when some 200 stags were gathered.

On the Sunday, prior to enjoying a walk round Loch-an-Eilein, thence to Coylumbridge, we visited a small croft house by the loch side which has been carefully renovated by the Nature Conservancy and furnished as a Visitor Centre, with an exhibition of photographs and maps depicting something of the wildlife of the area. A well-defined path follows the shores of the loch for a distance of some 2½ miles or so. The loch is completely surrounded by woodlands of natural Pine, also with Birch (Betula pendula and B. pubescens), and Juniper with them, except where the Pine trees are close together. In the 'closed' Pine woods we saw that mosses which do not require much light were growing in profusion. They included three species of the Feather Moss. On the higher ground which we could see above the path where it came out of the wood, the Pine trees gave way to heather moor. In the undergrowth of the wood we found two plants, locally common in Pine woods, Intermediate Wintergreen (Pyrola media), and Chickweed Wintergreen (Trientalis europaea), both with flowers in bud. The fruiting bodies of the parasitic fungus, the Common Birch Polypore (Piptoporous betulina), sometimes called the 'Razpr Strop Fungus', as it has been recommended for stropping razors, projecting little brackets from the trunks of many old Birch trees.

To the east of the loch there is open woodland with a few scattered Pines where good regeneration occurs in places because the ground is grazed less by deer. By the loch side too, we saw several large nests of Wood Ant (Formica rufa), a species which particularly favours pinewoods on sandy soil.

Monday morning was spent in the immediate vicinity of Loch Insh, and on the homeward journey a stop was made near Dunkeld to visit the Scottish Wildlife Trust Reserve at Loch of Lowes, where good views of the Osprey were had by all.

N. Henderson
J. Raeburn

Edgarhope Circuit - 20th April 1974

Note on the occurrence of the Short Tailed Vole (Microtus agrestis) at Edgarhope Forestry Plantation

Numerous surface runs and feeding places of Microtus agrestis were found on a recently cleared and replanted area in the Edgarhope Plantation, near Lauder. The site was covered by dead grass, with the stumps of felled trees still in situ, and many of the thinner branches left lying on the ground. Young trees had been planted about twelve months previously, and were well established. Some of these trees showed signs of Vole damage, with bark stripped off and shoots gnawed.

Many burrow entrances were found, and surface runs could be traced under the dead grass for some yards from the holes. Microtus in winter makes an elaborate and extensive system of surface runs while foraging. Where branches roofed the runs, piles of droppings could be seen, reflecting the habit of

Microtus of feeding where there is a certain amount of cover. Food may be carried to such places, in preference to eating it where it is found.

From the large numbers of holes present, it was apparent that there was a high population density of Microtus on the site. Small microtine rodents exhibit a cyclic build-up in numbers, followed by a 'crash' when numbers are severly reduced. This is not the same as the annual cycle, when older animals die in the winter, leaving only the young of late summer, but it is an numerical build-up superimposed on the annual cycle, over a period of approximately four years. Although it was impossible to estimate actual numbers, from the evidence noted, it appeared likely that unless an adjacent area of woodland were cleared, enabling Microtus to emigrate to new territories, such a crash would be imminent.

R.J. Harper

May Island - 15th June 1974

Twenty-three members and friends made the trip out from Crail and had the good fortune to enjoy the fine weather that prevailed throughout the day. The list of birds seen was:- Great Northern Diver; Fulmar; Gannet; Shag; Goldeneye; Eider; Oystercatcher; Turnstone; Whimbrel; Redshank; Purple Sandpiper; Dunlin; Great Black Backed Gull; Arctic Tern; Rock Dove; Swallow; Wheatear; Whinchat; Meadow Pipit; Rock Pipit. S.O.C. representatives were at the ringing station and we were shown a Siskin, Willow Warbler, Pied Wagtail and Flycatcher which had just been ringed and were about to be released.

H.S. Hughes

Holy Island Weekend 5th-7th July 1974

The Holy Island of Lindisfarne, part of which is a National Nature Reserve, was the venue for a pleasant and instructive weekend. The weather on our arrival was dull and wet but fortunately the following morning was bright and sunny and very warm - a condition which we enjoyed for the remainder of our visit. Most of the party stayed at Marygate House, a pleasant, homely Trust House situated in the village.

We commenced our visit with a short geological excursion to the harbour area. Here we examined a Permo-Carboniferous dyke of quartz dolerite which had been intruded into the local limestone. The limestone had been indurated at its contact with the dyke. Fossils such as Brachiopods, Criniods, Sea Mats (Polyzoa) and Orthoceratids were abundant in the limestone. The dyke is associated with the Great Whin Sill, as a 'feeder' to the Sill, which crops out across the north of England and terminates in the east, at the Farne Islands.

Saturday morning saw the party exploring the sand dunes which stretch westwards to Snook Point. The dunes are interesting botanically, a fact which may eventually cause the disappearance of many of the rarities through the senseless cupidity of a small number of botanists who pick the plants. Another threat to the dune area is the rapid spread of the alien plant, Pirri-pirri Burr, which was accidentally introduced from New Zealand in recent times. Two bird carcases were discovered - one a Kestrel and the other a Short Eared Owl - their plumage completely matted by the sticky burred seeds of this interesting plant.

Sunday was spent exploring part of the coastline at Lindisfarne Castle, where we turned our attention to marine biology. No doubt our party presented a somewhat amusing spectacle as they paddled in the shallows. However, it was the end and not the means which mattered, and our catch was interesting, including a Three-Bearded Rockling, a Fifteen Spined Stickleback, a young

Common Pipe Fish, a young Plaice, two species of Sea Squirt and an Elephant Hide Sponge. We next made our way to the rocky outcrop on the north shore known as Coves Bay. Here we searched the spoil heaps of an abandoned limestone quarry for crinoid ossicles which are known locally as St. Cuthbert's Beads.

At this point, the excursion formally ended - for 'Time and Tide wait for no man'.

G. Bell

Note on a Pellet of the Black Headed Gull (*Larus ridibunda*) found on Lindisfarne 7th July 1974

The pellet which was collected from the dunes at the Snook was 30 mm long, and approximately 10 mm diameter. It was very friable and disintegrated on collection. It consisted of the following items:-

Talitrus saltator (Amphipod)	30 carapaces
Carcinas maenas (Shore Crab)	(1-4 walking legs (1 cheliped and part of carapace
Cardium edule (Common Cockle)	1
Weed - Laminaria spp. and other fragments	
Sand	1 gm approx.

From the prey items present it would appear that the bird was feeding on the strandline on a newly dead crab and cockle, and live sandhoppers. This would account for the weed present in the pellet.

I am grateful to Mr. D.H. Jones for identifying the pellet as that of a Black Headed Gull.

R.J. Harper

Plants on Holy Island, Northumberland, 6th-7th July 1974

Holy Island is interesting botanically because a number of different habitats occur within its small area. Salt-marshes foreshore, dunes, dune slacks, dune grassland, farm land, a limestone quarry, wasteground and a freshwater pool all support their typical flora.

Plants recorded included:- Common Cord-grass (*Spartina townsendii*), three Oraches (*Atriplex hastata*, *A. laciniata*, *A. littoralis*), Lesser Hawkbit (*Leontodon taraxacoides*) - distinguishable from its relatives because its flower heads are grey underneath, Pirri Pirri Burr (*Acaena anserinifolia*) - lurking inconspicuously! Bog Pimpernel (*Anagallis tenella*), Brookweed (*Samolus valerandi*), Knotted Pearlwort (*Sagina nodosa*), Blue Fleabane (*Erigeron acer*), Viper's Bugloss (*Echium vulgare*) - covered in Six Spot Burnet Moths, Moonwort (*Botrychium lunaria*), Carline Thistle (*Carlina vulgaris*) Soft Clover (*Trifolium striatum*), Rough Clover (*T. scabrum*), Seaside Thistle (*Carduus tenuiflorus*), Milk Thistle (*Silybum marianum*), Spiked Water Milfoil (*Myriophyllum spicatum*).

E. Helen Jackson

Notes on an Angler Fish (*Lophius piscatorius*) and Gurnard (*Trigla gurnardus*) Found on Lindisfarne 6th and 7th July 1974

During the Lindisfarne weekend in July, Colin Bell found a specimen of the Angler Fish (*Lophius piscatorius*) in Lindisfarne Harbour. The animal, though dead for some time, exhibited some of the interesting geatures of the genus.

This particular species of Angler Fish is a bottom dwelling animal and is flattened dorso-ventrally. Many other Angler Fish are deep sea dwellers, and are not like this.

The animal was about 15 in. long, dark grey on the upper surface, creamy white beneath, with a warty skin. It had a large mouth, containing a formidable array in both upper and lower jaws of sharp, backward pointing teeth, in two rows in each jaw. (See p. 38.)

The small pectoral and tail fins were damaged. The lure or 'fishing rod' is a peculiar modification of the front fin ray of the dorsal fin. By waving this elongated fin ray with its tuft of filaments on the end, little fish are lured to the mouth of the Angler Fish.

Colin also found the Gurnard (Trigla gurnardus) on the strandline near Lindisfarne Castle. This fish is also a bottom dweller, and it shows adaptations to the 'mud-grubbing' way of life. The mouth is directed downwards and is shovel-shaped. The pectoral fins are modified to a series of three separate fin rays on either side, each capable of independent movement, and with a good nerve supply enabling the fish to use them as a set of 'feelers' as well as 'legs', as it searches for food on the sea floor. (See p. 20)

R.J. Harper
Colin Bell

Bowhill Estate Outing - 15th June 1974

The Bowhill Estate lies in a triangle of land formed by the Rivers Ettrick and Yarrow. It is well wooded with a great deal of Hawthorn, Rowan and many introduced exotic species of trees.

A large pale-coloured Mink (Mustela vison), the North American fur-bearing relative of the Stoat (Mustela erminea), was observed swimming off to the far shore of the Upper Loch. A few years ago some Mink escaped from a fur farm in the vicinity and since then the gamekeeper on the Estate has trapped about 30 of these animals.

Among the many items of interest seen was a collection of small jumping bugs or Frog Hoppers (Cercopidae spp.), whose larvae or nymphs produce Cuckoo Spit. A nymph was examined under the lens - it could walk only slowly and it could not fly as its wings were not yet developed. While still in the spit, a nymph grows and casts several skins, before changing into a winged adult. There is no 'middle' or pupal stage in the life history of this family as there is in that, for example, of the Lepidoptera (Butterflies and Moths).

There were many species of flowering plants bordering the pathways, including Giant Valerian (Valeriana pyrenaica), Wood Cranesbill (Geranium sylvaticum), and also a Russian Lady's Mantle (Alchemilla tytthantha), which differs from the Common Lady's Mantle by having very hairy leaves. It is a native of the Crimea and has recently become naturalised in Selkirkshire and Berwickshire. A great deal of interest was shown in a hybrid Geranium (Geranium endressii x versicolor), having pale petals with deep violet veins. Toothwort was also found - see observation page 13.

Many birds were seen, Willow Warbler, Blackcap and Chiffchaff were heard singing, although Mr. Smith, the leader, said that the migrants were fewer in number in 1974.

A. Reddin

Burnmouth Outing - 29th June 1974
Leader Mr. J. Winham

Burnmouth on the Berwickshire coast, is an interesting area botanically as lying on limestone, maritime plants, such as Thrift or Sea Pink (Armeria maritima) and Sea Plantain (Plantago maritima) occur alongside calcicoles - plants confined to, or most frequently growing on, soils containing free calcium carbonate. The calcicoles found on the cliffs included Common Rockrose (Helianthemum chamaecistus), Burnet Sacifrage (Pimpinella saxifraga), whose juice has been used to give a cucumber flavour to salads and sauces and is neither a Pimpernel nor a Saxifrage, but a member of the Hedge Parsley family or Umbelliferae; Bloody Cranesbill (Geranium sanguineum); Carline Thistle (Carlina vulgaris); Kidney Vetch or Ladies Fingers (Anthyllis vulneraria) and Marjoram (Origanum vulgare) a calcicole quite common in the South of England but only found locally in Scotland.

The special feature of the cliffs on the north side of Burnmouth village was the mass of Valerian (Centranthus ruber), its flowers not all red as its specific name would suggest, but some white or pink. On the cliffs on the south side of the village there was a large patch of Wood Vetch (Vicia sylvatiaca), with its drooping stalks of as many as eighteen whitish purple-veined pea flowers a rather uncommon plant found locally throughout Britain in rocky bushy places, in woods and on cliffs by the sea. Some members of the E.N.H.S. saw it again growing on the steep sides of a burn near the head of Glen Lednoch during the outing there a fortnight later. Also on the south cliffs at Burnmouth, was a large colony of the Great Horsetail (Equisetum telmateia), the tallest of the British extant Horsetails, which was seen again by members on the Roslin outing at the end of July (see below).

J. Raeburn

Roslin Circuit - 27th July 1974

On this outing it was interesting to find three species of Horsetail, Common Horsetail (Equisetum arvense), Wood Horsetail (E. sylvaticum) and Great Horsetail (E. telmateia).

Horsetail belong to a very primitive group of plants which flourished in the swamps of the Carboniferous Period over 200 million years ago at the time when the Coal Measures were being laid down. The ancient species were large - up to 100 feet in height - woody tree-like plants; the living forms are non-woody perennials. Today there are only about 23 species in the world, of which 11 are found in Britain.

The Common Horsetail, which is widely spread in fields, hedgebanks and waste places throughout Britain, was seen at several places on the route; the Great Horsetail, which is very local in Scotland was found growing vigourously, its sterile stems dirty white in colour and nearly three feet tall, in the damp wood not far from Rosslyn Chapel, while the Wood Horsetail, a commoner species in Scotland than further south and identified by its branched whorls of branches drooping at their ends, was recognised at the edge of the shrub area beside the disused railway line.

J. Raeburn

Aberfoyle Outing - 21st September 1974

The day started fine but the weather deteriorated sadly in the Trossachs area as the day progressed. However in spite of the rain, some 41 members and friends took part in the coach run where the first excursion stop was for the exploration of the Aberfoyle slate quarries. This was followed by picnic

Lunch within the David Marshall Lodge. A walk along the very wet and muddy forest paths in the afternoon led to Brig o'Turk where a number of the more active members continued up the roadway as far as Glen Finglas reservoir. The return to Edinburgh was via Callender and Stirling. No items of interest were brought to the attention of the leader on this excursion.

H.S. Hughes

Open Day - Slateford to Juniper Green

A Public Open Day was held on August 17th 1974, organised in co-operation with Edinburgh Corporation City Planning Department, Scottish Wildlife Trust Lothians Branch, Water of Leith Project Group, Currie and District Local History Society, Colinton Amenity Society and the Lothian River Purification Board. In addition to the Walkway there was a comprehensive exhibition in the L.R.P.B.'s premises at Colinton Dell House. Officially the day began at 11.00 hrs and ended at about 14.30 hrs, though for some the day was longer. Edinburgh Corporation supplied copies of a Nature Trail pamphlet for handing out to those interested.

Guides were posted at carefully chosen places in order to answer questions and volunteer knowledge to members of the public. This was found more satisfactory than escorting large groups along the Walkway. The response from members of the Society for help was good, and the route was well covered. Though one could not say the general public flocked, yet there was a heartening response and it is reckoned that 15 members were recruited.

The exhibition was first class with photos, maps, charts, models, slides displays and aquaria. The weather, for which we disclaim responsibility, was fair and less than fair. However, the Open Day was a valuable exercise in publicity and education, matters that an outward-looking Society cannot afford to ignore.

C.P. Rawcliffe

A Walk by the River from Slateford to Juniper Green

Branches of the same Walkway, covered on the Open Day, provided the route for one of the informal Saturday afternoon winter excursions and enabled several members of the Society to obtain a close and detailed look at the local history of the Water of Leith area from Slateford to Juniper Green.

Our leader on 16th November was Jack Cruikshank of the Currie and District Local History Society. Although knowledgeable in all aspects of the local history, his speciality subject is the history of the multitude of mills that have operated over the centuries in the area.

We were told of the mills that produced commodities as diverse as sawdust and snuff, of mills that, centuries ago, printed both bank notes and playing cards under licence, and we were told too of the many characters who lived and fiddled - as millers invariably did - in the area.

We were shown the large houses that once dominated the district - Redhall, Gillespie and Woodhall and we spent a few macabre moments examining mort safes in Colinton Churchyard that so effectively forestalled the local resurrectionists.

The afternoon was sunny and the setting incredibly peaceful. A hundred or so years ago it would not have been so tranquil, for when it was the centre of a local community, people both lived and worked there, but that community has now taken its place in history and nature has once again strengthened her hand.

We saw Tree Creepers, Dippers, Bullfinches and a Grey Squirrel - normally no doubt we would have wanted to see many more species but this was one of those rare occasions when we were all well content to let local history play host to Natural History.

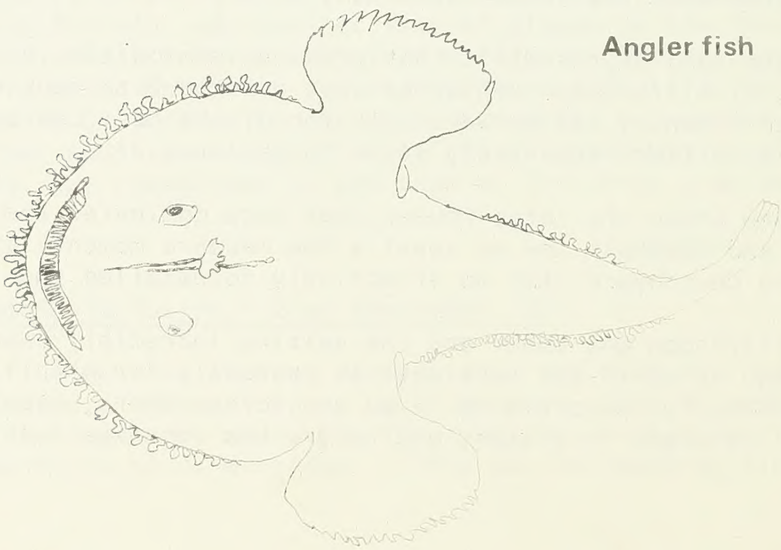
In the end as we stood by the old copper mine workings at Juniper Green and watched the Rooks returning to their Woodhall roosts, we agreed that this was a very pleasant way to spend a Saturday afternoon.

C.A. Pountain

Transactions of the Edinburgh Field Naturalists and Microscopical Society Session 1907-1908

A Rare Plant By Mr. James McAndrew

Juncus tenuis, Wild. - I found two tufts of this rush one afternoon last August on a piece of waste ground in Morningside Grove, Edinburgh. Perhaps in less than a year this ground would have been built upon. On the following day I went back to remove the plants, but I found that during the night some cattle had been there, with the result that one of the tufts had been devoured by them. However, I secured the other tuft and dug it up. This rush was one of the late George Don's reputed discoveries, and remained a doubtful Scottish plant until 1887, when I found a colony of it by a roadside near New Galloway, Kirkcudbrightshire. Subsequently I found it in three other places in the same county ...... I am unaware of its having been found so far east as Edinburgh before.



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